

The AGRICULTURAL HISTORY REVIEW



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*

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WRAY VAMPLEW

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A Grain of Truth: The Nineteenth-Century Corn Averages¹

By WRAY VAMPLEW

THE initial use of the corn averages was to regulate Britain's external grain trade, but during the nineteenth century other functions were added. Many landlords began to use them as the basis of corn rents; from 1837 they were widely utilized in the calculation of tithe commutation payments; and in the 1880s they were acknowledged as a 'public official record of the average prices of [an] important article of working class consumption'.² Historians, too, have made use of the averages for several purposes, among them that of assessing the

value of British corn imports,³ to estimate and examine domestic wheat production,⁴ to form consumer price indices,⁵ as indicators of the state of the harvests,⁶ as guides to social unrest,⁷ and, of course, simply as a record of agricultural prices.⁸ Unhappily, such use has tended either to ignore or to play down the concern of contemporaries as to the validity of the figures.⁹ Apart from the recent work of Adrian, who discusses the reliability of the averages with respect to markets in East Anglia, we have to go back almost half a century, to the monographs of Fay and Barnes, to find any detailed discussion of the calculation of the averages, and even these are not wholly satisfactory because of limitations on the time period covered, and a failure to realize the full implications of the statistical procedures adopted.¹⁰ The intention of this

¹ Where not otherwise stated the statistical data for this paper were obtained from PRO Corn Office Papers, MAF 10/25-7, 298-301, 368-9, the *London Gazette*, and the *Journal of the Statistical Society*. I am grateful for research assistance from Joyce MacMillan and Margaret Williamson, for financial assistance from the University of Edinburgh and the Flinders University of South Australia, and for comments on an earlier version of the paper from my colleagues at Flinders.

² Select Committee on the Corn Averages (BPP 1888, X), QQ 22-5, 33. In the twentieth century cereals deficiency payments were also based on the averages.

³ A H Imlah, *Economic Elements in the Pax Britannica*, Cambridge, Mass, 1958, p 31; J R T Hughes, *Fluctuations in Trade, Industry and Finance 1850-1860*, Oxford, 1960, p 61.

⁴ S Fairlie, 'The Corn Laws and British Wheat Production, 1829-76', *Econ Hist Rev*, 2nd ser, XXII, 1969; E L Jones, 'The Changing Basis of English Agricultural Prosperity, 1853-73', *Ag Hist Rev*, X, 1962, p 111; D Grigg, *The Agricultural Revolution in South Lincolnshire*, Cambridge, 1966, pp 157-8; M Olson and C C Harris, 'Free Trade in Corn: A Statistical Study of the Prices and Production of Wheat in Great Britain from 1873 to 1914', *Quarterly Jour Economics*, LXXIII, 1959.

⁵ W S Jevons, 'On the Variations of Prices and the Value of the Currency Since 1782', *Jour Stat Soc*, XXVIII, 1865; A Sauerbeck, 'Prices of Commodities and the Precious Metals', *Jour Stat Soc*, XLIX, 1886; R S Tucker, 'Real Wages of Artisans in London 1729-1935', *Jour American Statistical Association*, XXXI, 1930; A D Gayer, W W Rostow and A J Schwartz, *The Growth and Fluctuations of the British Economy, 1790-1850*, Oxford, 1953, I, pp 460-84; E H Phelps Brown and S V Hopkins, 'Seven Centuries of the Prices of Consumables Compared with Builders' Wage-Rates', *Economica*, XXIII, 1956.

⁶ R C O Matthews, *A Study in Trade-Cycle History: Economic Fluctuations in Great Britain, 1833-42*, Cambridge, 1954, pp 30, 34.

⁷ W W Rostow, *British Economy of the Nineteenth Century*, Oxford, 1963, pp 124-5.

⁸ eg J D Chambers and G E Mingay, *The Agricultural Revolution 1750-1880*, 1966, *passim*; B R Mitchell and P Deane, *Abstract of British Historical Statistics*, Cambridge, 1962, pp 488-9; T W Fletcher, 'The Great Depression of English Agriculture 1873-1896', *Econ Hist Rev*, 2nd ser, XIII, 1960-61.

⁹ Of the works cited in the previous footnotes only three authors commented on the accuracy of the statistics. Olson and Harris acknowledged that the annual prices which they used were unweighted averages, but carried on regardless; Matthews considered that the figures for the quantities sold were 'notoriously unreliable' as proxies for production; Fairlie agreed that they had deficiencies but felt that they were reasonable indicators of trends and fluctuations. No author went into detail on the validity of the raw data.

¹⁰ C R Fay, *The Corn Laws and Social England*, Cambridge, 1932; D G Barnes, *A History of the English Corn Laws 1660-1846*, 1930; L Adrian, 'The Nineteenth Century Gazette Corn Returns From East Anglian Markets', *Jour Hist Geog*, III, 1977, pp 217-36. Before this article went to press the author was unaware of the index of sales returns produced by Susan Fairlie and published in

paper is to extend the critique of Fay, Barnes and Adrian, to assess whether or not the corn averages were statistically sound, and to provide historians with a revised price series and an index of production for wheat, oats and barley.

I

The origins of the corn averages lay in the government's efforts to operate its Corn Laws.¹¹ If the market price at home was to determine the level of import duties and export bounties then some method of obtaining that price had to be devised. The revealed deficiencies of merely relying on 'expert' opinion paved the way for the production of an official register of grain prices. Initially, responsibility for its compilation was placed upon JPs in a few selected counties, but the legislation proved ineffectual. Greater success was obtained with an Act of 1781, which required an Inspector of Corn Returns to publish Mark Lane (London) corn prices weekly in the *London Gazette*. Eight years later data collection was extended to all maritime counties, but imperfections in the legislation led to a codifying and consolidating statute in 1791 by which inspectors in selected towns in each of twelve English maritime districts had to produce weekly average grain prices for their particular markets. These prices were used to calculate averages for each district which were then made the basis for controlling imports into that district. A ludicrous position was thus created in which one maritime district could have its ports closed against foreign grain while another allowed importation. Reaction to this situation induced legislation in 1804, which abandoned provincialism and required the

central Receiver of the Corn Returns to calculate a *national* average price by which all ports would be governed.¹²

Before 1821 the price for the first maritime district, which comprised the counties of Essex, Kent and Sussex, was determined exclusively by dealings in the Mark Lane Corn Exchange. Here an inspector had been appointed by the proprietors of the Exchange, and all corn factors were required, under a penalty of £50, to submit to him a weekly written account of the price and quantity of every sale of home-grown corn made by them, the names of the buyers, and details of the weights and measures utilized. The inspector was required to convert all weights and measures into Winchester bushels and to calculate a district average price by dividing the total receipts by the total quantity of sales. For the other eleven maritime districts local magistrates appointed inspectors for each of the designated towns. All dealers in corn, including millers, maltsters, merchants, factors, and agents, were bound, under a £10 penalty, to supply them with weekly written accounts of the price, quantity, and weights and measures of all transactions. A town average price was then calculated in the same way as for Mark Lane and transmitted to the Receiver of the Corn Returns in London, who used the information to produce the district and national figures.¹³

Practice and prescription, however, did not coincide. Complaints of fraud and manipulation led to the appointment of a Select Committee whose report in 1820 maintained that 'with the exceptions of the returns taken at

Industrialisierung und 'Europäische Wirtschaft' im 19. Jahrhundert: ein tagungsbericht, Veröffentlichungen der Historischen Kommission zu Berlin, Band 46, Walter de Gruyter, Berlin, 1976, pp 91-6.

¹¹ This section is based on *S.C. on Petitions Relating to Agricultural Distress* (BPP 1820, II), *S.C. on Corn Averages* (BPP 1888, X), particularly the Second Report and the evidence of R. Giffen, Controller of the Corn Returns; Fay, *op cit*, pp 62-7, Barnes, *op cit*, pp 41-67.

¹² Strictly it was not initially a national average. Scotland's external corn trade was to be controlled by the aggregate average of four Scottish districts, but in 1805, following the failure of this average to allow imports without prohibitory high duties at a time when Glasgow, Paisley and Greenock faced almost famine prices, Parliament acceded to requests that Scotland should come under the control of the English averages, which were generally higher than their Scottish counterparts. Ireland was classed as a foreign country till 1806, after which there was free trade in corn between Britain and Ireland and Ireland's foreign corn trade also became regulated by the English averages. Fay, *op cit*, pp 63-4.

¹³ *S.C. on Petitions, etc.*, Report, pp 3-5.

the Corn Exchange, the greatest neglect and inattention has universally prevailed'.¹⁴ Even at Mark Lane there were omissions, for although the corn factors generally obeyed the injunction of the statute, purchases made from grain growers, shippers and agents were not within the inspector's province. Nevertheless, there is no reason to suspect that the grain sold by the factors would not be representative of other dealings at Mark Lane, and, as there was only this market to consider when calculating the district average, the omission would not cause weighting problems. More important an omission was the exclusion of the major towns of Essex, Sussex and Kent from the first district's average, for grain sold in these towns was not necessarily similar to that of Mark Lane, where dealings tended to be in the higher quality corn of the counties and where price would also reflect the higher transport charges involved.¹⁵

Outside London the Committee found 'universal neglect' and serious under-registration as evidenced by the many examples of low and nil returns. Possibly low figures occurred because dealers did not record sales made on non-market days or sales contracted outside the market place, both of which were common provincial practices especially where the growers sold their corn directly to the millers and merchants.¹⁶ Moreover, it must be remembered that sales of foreign corn would not be registered as the corn averages dealt solely with the native product. Nevertheless, it is difficult to believe that these explanations could account for such instances in 1819 as the returns from Plymouth, which include weeks in which only seven quarters and three quarters were sold; or those from Bristol, a city with forty corn dealers and factors, which included weeks with sales of only twenty-five and thirty-nine quarters, and one week in which

no sales at all took place;¹⁷ or, worst of all, the astonishing and alarming figures from Manchester, Macclesfield and Stockport which suggested that not one grain of British corn was sold there throughout the whole year! Clearly many inspectors were not doing their duty. Outside Mark Lane they were all part-time officials, combining the post with a variety of occupations including, at Bodmin, a barber who sent his wife to obtain the information.¹⁸ Perhaps they were not paid enough to ensure diligence: they received five shillings a return in contrast to the Mark Lane inspector's annual salary of £200.¹⁹

Possibly the neglect of the inspectors was encouraged by the weighting system used in calculating the district and national averages. No account was taken of the varying sales volumes in the different markets. Each town in a district was allotted the same weight in the district average, and each district was given equal weight in the national average. Since price alone thus could influence the averages it may well be that the inspectors saw no necessity to ascertain correct figures for sales volumes as long as the prices were reasonably accurate: and an impression of the going rate for corn could have been obtained without detailed form-filling and time-consuming calculation.

The inequities in the weighting procedure also produced a statistically incorrect average. Data in the appendix to this article shows the weights assigned to the various towns in the calculation of the district and national averages in the week ending 16 January 1819.²⁰ It can be seen that there were some wide disparities between these weights and

¹⁴ Ibid, p 5.

¹⁵ Ibid, p 6.

¹⁶ Ibid: Evidence, pp 16, 50; Fay, op cit, p 65.

¹⁷ The inspector at Bristol acknowledged that his returns bore little 'resemblance to the whole of the transactions which have actually taken place within the city'. S.C. on *Petitions, etc.*, Evidence, p 37.

¹⁸ Ibid, p 24.

¹⁹ Ibid: Report, pp 3-5. In 1821 the local magistrates were empowered to give whatever they thought to be 'a fit and reasonable sum' providing that it did not exceed £30 per annum: 1 & 2 Geo. IV c 87.

²⁰ The year was chosen because detailed data are gathered together in the S.C. on *Petitions, etc.*, Appendix. The week was chosen randomly.

the actual percentage of sales recorded in the towns. The sixth district, which registered sales of only 287 quarters of wheat at an average price of 80s 6d, had the same weighting in the national average as Mark Lane where 4576 quarters were sold at an average of 72s 7d. Within that sixth district, Burton, with recorded sales totalling a mere one quarter and one bushel at 85s 4d a quarter, was weighted exactly the same as Cocker-mouth which had the largest sales in the district, 120 quarters, at the lowest price 73s 4d. In the national average Burton's meagre transactions had twice as much influence as the third district's Fakenham, which that week had sales of 3030 quarters, second only to Mark Lane in its turnover. The absurdities are almost endless. Within the third district, Fakenham, Norwich and Lynn had total sales of 6028 quarters, but as a group were weighted only the same in the national average as the eighth district's Pwlheli, Bala and Corwen, where transactions totalled all of fifteen quarters. We also find that the ten markets outside London with the largest sales had the same influence on the national average as the eleven with the lowest sales (excluding nil returns), despite their respective totals being a massive 10,379 quarters and a mere sixty-one quarters.

The tendency of the official weighting system was to inflate the national average price above one produced by weighting prices according to sales volume in each market. Essentially this was due to the weight allotted to the districts in the computation of the national average. In the particular week cited above, rank-order correlations between the volume of sales and lowness of price within districts were $-.61, -.41, -.10, +.39, +.71, +.27, +.26, +.58, +.34, -.24$, and $-.24$, whereas a similar calculation between districts revealed a strong positive correlation of .73.²¹

²¹ There are correlations for only eleven districts as the London market, Mark Lane, was classed as a district on its own. Why the inter- and intra-regional correlations differed is not easy to explain. Larger markets might have been expected to have lower prices because of organizational efficiencies and quantity discounts. Possibly within

Thus allowing low sales/high price districts equal weight with high sales/low price ones was bound to inflate the national average, in this instance by 1s 7d above a price given by weighting the local averages according to sales volumes. A fuller discussion of the significance of the error emanating from the weighting procedures will be found elsewhere,²² but it will be apparent to the reader that a Corn Law which offered protection at a price determined by the averages would in practice cease that protection when the actual market price would be below that specified in the legislation. Thus the ports could be open to foreign grain when the government did not intend them to be. This actually occurred for oats in February 1818 and August 1820.

Allegations were made to the Select Committee that fraud had been practised. Amidst a generality of assumptions and beliefs two specific instances were cited: one at Mark Lane, the other at Liverpool. It was argued that, in an attempt to influence the London average, fictitious sales of wheat had been recorded in the six weeks preceding 15 November 1818: evidence for this lay in the corn factors' circulars which quoted prices bearing little resemblance to the Corn Exchange returns. At Liverpool the laxity of the inspector allowed speculative holders of British corn to return 2300 quarters of wheat at 50s when the true market price was 69–70s, 2000 quarters of oats at 18s (true market price 23–24s), 1000 quarters of beans at 35s (48–50s), and 500 quarters of peas at 38s (48–51s). Fortunately the figures excited suspicion on the part of the central Receiver, and as he used his powers to omit the Liverpool data from the national calculation the

some districts these factors may have been offset by quality differences or by grain from lower-priced areas being resold in the larger markets. Transport costs between districts in the pre-railway era would make inter-regional sales less feasible, though against this is the fact that even in the 1830s Mark Lane acted as an entrepôt between the surplus and deficit areas. J Wilson, *Influence of the Corn Laws as Affecting All Classes of the Community and Particularly the Landed Interests*, Edinburgh, 1839, p 12.

²² W Vamplew, 'The Protection of English Cereal Producers: The Corn Laws Re-assessed', *Econ Hist Rev*, forthcoming.

attempt to lower the general average consequently failed. Failure seems to have been the fortune of all attempted frauds: at least the considered opinion of the Committee was that in no case of alleged fraud had the perpetrators succeeded in their desire to open or shut the ports.²³

For those who wished to raise the average there was little need to resort to illegalities as the weighting procedure made it possible to work the averages quite legally. Indeed, allowing small sales to carry as much, and sometimes more, influence than large sales on the national average was an open invitation to manipulation. It was a not uncommon practice to send agents to purchase relatively inconsiderable amounts at inflated prices in the smaller markets.²⁴ The temptation to work the averages was strengthened by the 1815 Corn Law which allowed foreign wheat freely into the country for the three months following any quarter day on which the average price for the preceding six weeks had been at or over 80s a quarter.²⁵ As the average production cost of much British wheat at this time was higher than that of foreign produce,²⁶ there was an incentive for dealers to raise the average so as to make profits on the cheaper foreign grain, for even when prices fell back below the 80s mark wheat could still be imported until the position was

reviewed next quarter day.²⁷ Two corn factors giving evidence to the Committee were convinced that perhaps £400 to £500 could fix the ports, especially in the August quarter, though neither said that it had actually been done.²⁸

II

The Select Committee's investigations led to two measures in 1821 designed to solve the twin problem of weighting and manipulation. First, when calculating the national average the Central Receiver was required to weight each market according to its sales volume. Additionally, in an effort to render the average more representative of actual market experience, the number of towns entering into the calculation was increased from 139 to 148. A further two towns were added in 1827. When the sliding scale Corn Law was introduced in 1828 the opportunity was taken to revise the list of towns with twenty-one of the smaller markets, mostly Welsh, being replaced by towns mainly from inland areas.²⁹ This meant that for the first time major consumption centres such as Derby, Nottingham, Leicester, and Birmingham were allowed to affect the national average.

The adoption of the sliding scale possibly increased the temptation to work the averages for now the duty could alter weekly and at any price level, though, of course, the fact that each town was given its due weight in the calculation of the average lessened the influence of fraud, manipulation or misrecording at any particular market. Allegations of malpractice continued to be made,

²³ Ibid: Report, pp 6-7, Evidence, pp 28, 54-5. There is one alleged successful fraud before 1828 but it is not clear whether or not this was before 1821. *S.C. on Agricultural Distress* (BPP 1836, VIII), Q 8163. The grain involved in this case was rye, of which such small quantities were sold as to render manipulation much easier than with other grains. In 1828-29, the first harvest year for which full information is calculable, average recorded weekly sales of wheat were 48,494 quarters, oats 44,037, barley 32,299, beans 5826, peas 1492, and rye only 689.

²⁴ *S.C. on Petitions, etc.*, Evidence, p 42; *Hansard* (Commons), 2nd ser, IV, 941, 26 Feb 1821. The inflationary mechanism could have been a genuine reflection of increased demand pressure on scarce local supplies or dealers simply could have offered more than the going rate. The latter procedure would have been easier to arrange than when dealers wished to reduce the averages as both buyers and sellers would be happy with the high prices.

²⁵ There was similar legislation for other grains. For rye, beans and peas the prohibitory level was 50s a quarter, for barley 40s and for oats 27s.

²⁶ *S.C. on Petitions, etc.*, Report, p 7.

²⁷ A provision in the law did allow that if the price fell below the prohibitory level in the first six weeks following the opening of the ports access would be refused to grain from any of the near European ports between the Eyder and the Bidassoa for the last six weeks of that quarter. This clause was actually applied to wheat in September 1818.

²⁸ *S.C. on Petitions, etc.*, Report, p 7.

²⁹ Returns were also taken for several Irish and Scottish towns but as an experiment only, and they were not used for calculating the average. In 1832 the collection of these returns was abandoned as an economy measure. At the time it was argued that the quantities involved would have been too small to influence the average significantly. *S.C. on State of Agriculture* (BPP 1837, V), QQ 319-23.

though as before most of these were in general rather than specific terms,³⁰ and again most attempts at fraud appear to have been unsuccessful.³¹ Whether sufficient dealers could get together to manipulate the market is debatable, though at least one contemporary economist believed that the internal market was too competitive for this to happen.³² Nevertheless, there does seem to be some substance in one widespread allegation that combinations of dealers in the large corn markets of London, Leeds and Wakefield had unduly raised the averages in the early 1840s.³³

Although Peel believed that fraud was neither as widespread nor as effective as was sometimes alleged, he took steps in 1842 to reduce even that level. The number of towns contributing to the average was increased from 150 to 290 with the intention of including all English and Welsh towns of importance. The official view was that the extended coverage made little difference to the average price,³⁴ but certainly by increasing the volume of sales entering into the calculation³⁵ it further reduced the significance of any particular market: eg ten random samples for each of the three years prior to the change showed that the percentage of total sales taking place in London, Leeds and Wakefield ranged from 21.0 to 25.8 with a median of

23.3 whereas a similar sample after the legislation yielded a range of 11.0 to 15.2 and a median of 12.8. Secondly, the duties of the inspectors in the new towns, and in the established ones on the death or retirement of the incumbent, were added to the work of the local exciseman. It was hoped that the employment of public officials directly responsible to the government would offer greater security from both fraud and inertia, along with a reduction in the costs of data collection;³⁶ though it was later suggested that the general quality of the inspectorate did not improve as the excisemen were not specialists in the corn trade — but neither was the Bodmin barber — nor resident in an area long enough to obtain local unofficial information.³⁷ Finally, in the belief that 'the great and only effectual security against fraud in the averages is to take away the temptation to commit it', the sliding scale was revised so that variations in price brought less steep and less irregular changes in duty.³⁸ Later, the repeal of the Corn Laws removed the temptation altogether.

III

Further complaints in the 1870s and 1880s about the accuracy of the averages led to another Parliamentary inquiry, this one charged with assessing whether they were still a fit basis for the calculation of tithe commutation payments.³⁹ Three major issues were raised: a suggestion that the decline in the sales figures for wheat reflected a growing inefficiency on the part of the corn inspectors; the possibility of errors emanating from inadequate market coverage; and the likelihood that the average was inflated by the inclusion of resales of grain, the increased consumption of corn on the farm, and confusion in the

³⁰ See, eg the sweeping but unsubstantiated claims in J Carmichael, *Review of the Evidence Taken Before the Select Committee of the House of Commons on Agricultural Distress* (1836); 'The Corn Laws', *Blackwood's Edinburgh Magazine* LI, March 1842; *S.C. on Agricultural Statistics* (BPP 1854/55, VIII), Appendix D.

³¹ *S.C. on Agricultural Distress* (BPP 1836, VIII), QQ 6249–51, 9597; *S.C. on Agriculture* (BPP 1833, V), QQ 4664. The Central Receiver of the Corn Returns claimed that there was only one instance of known fraud between 1828 and 1834. Adrian, loc cit, p 222.

³² R. Torrens, *An Essay on the External Corn Trade*, Edinburgh, 1829, p 16.

³³ Fay, op cit, pp 170–1.

³⁴ Statement of the Deputy Receiver of the Corn Returns. *S.C. on Agricultural Statistics* (BPP 1854–55, VIII), Q 868.

³⁵ In the period 1842–49 the inclusion of the extra towns increased the volume of wheat entering into the calculation by 30 per cent, barley by 32 per cent and oats by 12 per cent. Calculated from data in *Accounts Relating to Wheat, Barley, Oats, etc.* (BPP 1850, LII), p 20.

³⁶ *S.C. on Agricultural Statistics*, Appendix D.

³⁷ Ibid: Q 861, Appendix D.

³⁸ Peel's speech of 9 February 1842, quoted in Fay, op cit, p 171.

³⁹ *S.C. on the Corn Averages* (BPP 1888, X).

conversion of customary measures to imperial ones.⁴⁰

Clearly there were deficiencies on the part of the inspectorate and the investigating Committee was persuaded that it should call for increased vigilance by the inspectors.⁴¹ Even Giffen, the Controller of the Corn Returns, though generally satisfied with the performance of his inspectors, admitted that there were problems in some towns, notably Exeter, Hereford and Colchester.⁴² Certainly, in some markets, the volume of corn returned was directly related to the energy expended by the inspectors, and there appears to have been general laxity in asking for returns of corn sold away from the market.⁴³ The problem was not one of evasion or manipulation but of neglect and inertia: dealers, particularly those involved in several markets, saw no point in going out of their way to make returns which, now that the Corn Laws had gone, they felt had practical significance only for farmers and the Church.⁴⁴ Nevertheless, some critics appear to have been ignorant of the fact that only British corn had to be returned. Increasingly foreign grain was entering into British diets, and sales of this had no direct part in the averages; thus it is feasible that the declining returns of quantities sold merely reflected the declining acreage under wheat.⁴⁵ The quality of the inspectors may have accentuated the problem but they were not at its root.

There is little validity in the allegation that the omission of the smaller markets from the calculations led to false national averages. The weighting system would not allow small figures sufficient influence to distort the average: indeed when the number of towns was reduced from 290 to 150 in 1864 it was

'ascertained that no difference would have been made in the returns for some time previous'.⁴⁶ Nevertheless, in response to criticism of inadequate coverage, the number was raised to 187 in 1883 and to 196 in 1890.

Perhaps more significance can be attributed to the increased proportion of grain which was consumed on the farm. The rising incomes of the working class had so reduced the market for inferior grain that it had become more profitable to turn such lower quality corn into meat and milk by feeding it to livestock.⁴⁷ The dual problem here is, first, to ascertain what quantity of production remained on the farm and, secondly, the effect which this had on the official average price. The agrarian statistician, Major Craigie, reckoned that only 10 per cent of wheat, but much more of other grains, was consumed on the farm and another authority thought that, on the whole, 10–15 per cent of corn did not go to market.⁴⁸ It is not clear, however, that the average price was much higher than it would otherwise have been, for, although everyone accepted that inferior grain did not go to market — and thus, according to one authority, kept the market price 5 per cent too high⁴⁹ — most forgot that the very best corn, that used for seed, also frequently did not go, and this would have raised the average market price.⁵⁰ Until evidence comes to light showing what the *increased* proportion of non-marketed inferior grain was, it is by no means clear that the average was unduly inflated.

In contrast to the corn which never entered into the official records, other grain was double or even treble-counted because of resales, the proportion of which had increased through changes in the structure of the grain trade. In the early nineteenth century millers and maltsters were to be found at all the little markets, but now intermediaries did the purchasing here and then resold to the millers and

⁴⁰ Ibid: R Giffen, 'The Gazette Average Prices of Corn' *Jour Stat Soc*, XLII, 1879.

⁴¹ S.C. on the Corn Averages (BPP 1888, X), 2nd Report, vii.

⁴² Ibid: Q 4217.

⁴³ Ibid: QQ 587–8, 632.

⁴⁴ Ibid: QQ 229, 514, 1014–18.

⁴⁵ Giffen, loc cit, p 710. Official figures for acreage under wheat are 1869 3.7 m, 1879 2.9 m and 1889 2.4 m; imports of wheat for the same years were 37.6 m cwts, 59.6 m and 58.6 m. Mitchell and Deane, op cit, pp 78, 98.

⁴⁶ Giffen, loc cit, p 711.

⁴⁷ S.C. on the Corn Averages, Q 990, Appendix 6.

⁴⁸ Ibid: QQ 2015, 3209.

⁴⁹ Ibid: Q 1088.

⁵⁰ Ibid: QQ 2195, 2201, 2204.

the maltsters at the larger markets.⁵¹ It was argued that resales should not be allowed to influence tithe payments as they had no bearing on farm incomes, but the relevant Acts specified that *all* sales must be included in order to obtain a true idea of the current market price. There had been no debate about the inclusion of resales when the Tithe Commutation Bill had passed through Parliament, though, to be fair, there were less resales then.⁵² Possibly resales did inflate prices — most likely resales would be at higher than lower prices — but there is little that can be done, for there is no way in which resold corn can be distinguished from that being sold for the first time.

It was also suggested that the average was inflated — up to 10 per cent was alleged⁵³ — by customary measures being returned as imperial measures, and by improper conversions of sales by weight into sales by measure. Whatever the position was earlier, and that is a matter for conjecture, the allegations had little quantitative significance by the late 1870s.⁵⁴ A Corn Office analysis of the 1878 sales, shown in Table 1, suggests that the proportion liable to error (columns B and C) would be of the order of two-thirds for wheat, over a half for oats and about a quarter for barley. However, the degree of possible error, as opposed to its extent, would be much less significant as the customary quarters (column C) were 'very often nearly equal to' the usual weight of the imperial quarter. For wheat there were 200,000 quarters with 58½ to 60 lb in a bushel compared to the official 60 lb,⁵⁵ 310,000 at 60 to 63 lb, 770,000 at 63 lb, and only 12,000 over 63 lb; and for more than half of the bushels over the official weight the dealers had con-

Table 1
Analysis of 1878 Corn Sales

	A	B	C
Wheat	700,000	128,000	1,300,000
Oats	80,000	12,000	91,000
Barley	1,300,000	94,000	330,000

Source: R Giffen, 'The Gazette Average Prices of Corn' *Jour Stat Soc*, 1879, XLII, 716.

Key: A — Sold by imperial measure alone, or by Winchester and other local measures, which are practically equivalent to imperial measures.

B = Sold by weight alone.

C = Sold by other customary measures.

verted their sales into imperial measures for the purposes of the returns. Hence the potential error for wheat would, *at most*, be in the order of 1–2 per cent. For barley nine-tenths of the incorrectly measured grain was converted into imperial measures before being included in the returns to the inspectors. For oats the information is confused, but it would seem that although the variation in weight could range up to 10 per cent either side of the imperial measure at least half was converted into imperial measures by the dealers, and there was some offsetting in the rest with perhaps twice as much being below as was above the official weight. There was no evidence supplied regarding beans, peas or rye.

IV

So far this paper has concentrated on assessing the validity of the weekly averages. In this section, however, two other aspects of the averages will be reviewed, the annual average price and the annual aggregated sales figures. As part of this consideration two new statistical series will be constructed.

Unlike the weekly one, the annual average was not weighted to take full account of sales variations: the weekly averages were simply totalled and divided by 52 or 53, as the case might be. A few contemporaries criticized

⁵¹ Ibid: QQ 1010, 3079.

⁵² Ibid: QQ 1295, 1337.

⁵³ Giffen, loc cit, p 716.

⁵⁴ Ibid, pp 716–23.

⁵⁵ The evolution of official weights and measures is discussed in Fay, op cit, pp 68–77. In 1791 all conversions had to be made at 57 lb to a bushel of wheat, 49 lb for barley, and 38 lb for oats. By the 1880s the conversion factors were 60 lb, 50 lb and 39 lb.

this procedure but felt that generally the error would not be of significance.⁵⁶ Recalculated figures, shown in Table 2 and summarized in Table 3, suggest that this was more true for wheat and oats than for barley. Between 1829 and 1859⁵⁷ the mean percentage difference between the official annual average for wheat and one weighted according to sales was 0.7, with a maximum variation of only 2.5. For oats the discrepancy was slightly wider with a mean of 1.0 per cent and a maximum of 4.0 per cent. For barley, however, the mean variation was 2.2 per cent and the maximum 8.1 per cent. Many factors contributed to the differentials between the weighted and the official averages. Among them were variations in the demand patterns of the major consumers, the uneven marketing of grains over the year because of farmers' lack of storage facilities, particularly at times of bumper crops, and the absolute shortages of grain on other occasions, as occurred with wheat in 1847.

Table 4 shows the aggregated sales volume figures for wheat, barley and oats from 1828 to 1897. Though not as accurate as the price data, the figures are not as unreliable as some contemporaries suggested. Adrian has demonstrated the internal consistency of the sales figures for markets in East Anglia, and has also evinced that save in exceptional explicable cases their fluctuations for these markets correlate reasonably with both independent local estimates and the national aggregated sales figures.⁵⁸ In addition, Fairlie has shown that for the period 1852-53 — 1863-64 variations in the annual aggregated sales of wheat correspond well with fluctuations in

Table 2
Official and Recalculated Average Grain Prices
1829-59

Year	Wheat		Barley		Oats	
	O	R	O	R	O	R
1829	66.3	64.10	32.7	32.7	22.9	22.9
1830	64.4	63.9	32.8	33.2	24.5	23.10
1831	66.4	65.9	38.0	39.8	25.4	25.4
1832	58.10	58.7	33.1	32.11	20.6	20.6
1833	52.11	52.11	27.7	28.0	18.5	18.4
1834	46.2	45.11	29.0	29.2	20.11	20.9
1835	39.5	39.3	29.11	30.3	22.0	22.0
1836	48.6	48.11	32.10	33.0	23.1	23.0
1837	55.11	55.10	30.5	31.8	23.2	23.1
1838	64.7	64.9	31.6	31.5	22.6	22.5
1839	70.8	70.4	39.6	40.2	25.11	25.9
1840	66.4	66.7	36.5	36.11	25.8	25.2
1841	64.4	64.8	32.11	32.3	22.5	22.5
1842	57.4	56.7	27.7	27.9	19.4	19.2
1843	50.2	50.3	29.7	29.4	18.4	18.2
1844	51.4	50.10	33.8	33.10	20.8	20.7
1845	50.11	51.1	31.8	33.0	22.7	22.7
1846	54.8	55.0	32.8	34.11	23.8	23.6
1847	69.9	68.0	44.2	40.7	28.10	28.9
1848	50.7	50.8	31.8	31.8	20.7	20.5
1849	44.2	43.9	27.9	28.4	17.6	17.4
1850	40.3	40.3	23.6	24.3	16.5	16.2
1851	38.7	38.4	24.9	24.8	18.7	17.10
1852	40.10	40.9	28.7	29.2	19.1	18.11
1853	53.3	52.9	33.3	35.4	21.0	20.9
1854	72.5	70.10	36.0	37.1	27.11	27.9
1855	74.9	75.3	34.9	35.10	27.6	27.2
1856	69.2	68.9	41.2	40.11	25.3	25.0
1857	56.5	56.4	42.2	42.11	25.0	24.6
1858	44.3	44.3	34.9	35.10	24.7	24.0
1859	43.10	43.7	33.6	34.6	23.3	22.8

Source: PRO Corn Office Papers MAF 10/25-7, 298-301, 368-9; *London Gazette* 1829-59, *passim*.

Key: O = Official average in shillings and pence.

R = Recalculated average allowing for variations in weekly sales.

⁵⁶ J T Danson, 'On the Current Price, and the Cost Price, of Corn, in England during the last ten years, as illustrating the value of Agricultural Statistics', *Four Stat Soc*, XVII, 1855; T Tooke and W Newmarch, *A History of Prices*, IV, 1848, p 409.

⁵⁷ The individual market sales figures which allow the recalculation to be made are not available in published form after 1864. Unfortunately the author originally collected data as part of a project on British harvests 1820-59, and thus the last five years of published figures were not readily to hand.

⁵⁸ Adrian, *loc cit*, pp 223-4.

Table 3
Variations Between Official and Recalculated Annual Averages 1829-59

% variance	<i>Below official</i>								<i>Above official</i>					Mean*	Maximum
	5+	4-5	3-4	2-3	1-2	0-1	0	0-1	1-2	2-3	3-4	4-5	5+		
Wheat				3	3	13	3	9						0.7	-2.5
Oats				4	6	14	6							1.0	-4.0
Barley	1			1		5	2	5	5	2	5	3	2	2.2	-8.1

Source: Table 2

Note: * Ignoring sign

independently-derived harvest estimates.⁵⁹ Thus it may prove feasible to use the sales figures to say something about trends and fluctuations in domestic cereal production.

The sales data, however, cannot indicate absolute production levels for the various grains. Although Fairlie has done this for wheat by the use of multipliers on the sales figures, her method is not generally applicable because of the absence of independent harvest estimates for barley and oats by which to check the calculated output. Moreover, the multiplier which she used before 1842 is open to question. The change in the number of inspected markets in 1842 increased the volume of wheat recorded in the sales aggregate by 30 per cent for the remainder of the 1840s. If the multiplier of 2.8 used for the period 1842-64 is acceptable, as seems reasonable considering the correlation between the multiplied sales figures and independent harvest estimates, then this would suggest that the pre-1842 multiplier should have been around 3.6 rather than the 4.0 actually used.

Even if absolute production is forgotten and the sales figures are regarded simply as proxies for production indices, there are still problems to be faced. First, the annual sales cannot be taken as accurately reflecting fluctuations in cereal production because poor harvests could lead to sales from stocks and good harvests to stock accumulation. Grouping years together, however, will enable some offsetting to take place, and should allow

trends in output to be determined. Secondly, there are the changes in the number of markets entering into the calculation of the averages. Up to 1864 it is possible to remove the new town sales from the aggregates, but this would not allow for changes in marketing patterns in the long or medium term. Consequently this has been done only up to 1848 for the data sets in Table 5. Apart from this one instance separate indices have been constructed for each time-period in which the number of towns remained constant. That these are reasonably valid may be inferred from the official production estimates which would suggest an error in the constructed index for 1890-97 of 1 per cent for wheat, 2 per cent for barley and 1 per cent for oats.⁶⁰

The indices in Table 5 make it clear that the long decline in English cereal production began in the 1840s with first the easing of the sliding scale corn tariffs and later the total repeal of duties on foreign corn.⁶¹ It is also apparent that, whereas wheat output did not collapse dramatically till the 1870s, both oats and barley production had been affected severely three decades earlier. Barley, however, staged if not a recovery at least an arresting of the decline in the last third of the century.

⁶⁰ Mitchell and Deane, *op cit*, p 86.

⁶¹ The influence on cereal production of the Corn Laws and their repeal is discussed further in Vamplew, 'The Protection of English Cereal Producers: The Corn Laws Re-assessed,' *loc cit*.

⁵⁹ Fairlie, *loc cit*, pp 111-3.

Table 4
Aggregate Cereal Sales in the Inspected Markets 1828-1897

Year*	No of towns	Wheat '000 qtrs	Barley '000 qtrs	Oats '000 qtrs	Year*	No of towns	Wheat '000 qtrs	Barley '000 qtrs	Oats '000 qtrs
1828	150	2522	1680	2290	1865	150	3580	1768	217
1829		3224	1863	2180	1866		3135	1724	255
1830		2678	1994	1918	1867		2725	1576	285
1831		3270	1993	2155	1868		2680	1666	250
1832		3458	2339	2269	1869		2816	1388	162
1833		3651	2173	2240	1870		3399	1842	206
1834		3896	1900	2287	1871		3275	1767	197
1835		4126	2401	2277	1872		2582	1593	184
1836		4278	2316	2261	1873		2442	1735	193
1837		4172	2279	2225	1874		2392	1938	169
1838		3042	2451	2184	1875		2515	1489	122
1839		3996	2285	1838	1876		2202	1835	148
1840		3868	2308	2141	1877		1943	1795	176
1841		3648	2089	2136	1878		2142	1732	184
					1879		2022	1421	162
1842	290	5114	2949	2306	1880	187	1608	1592	165
1843		5174	2745	2130	1881		1738	1632	211
1844		6604	2712	1931	1882		1904	1873	212
1845		5714	2786	1822					
1846		5436	2096	1165	1883		2901	2576	408
1847		5192	2562	1022	1884		2833	3149	493
1848		4597	2063	870	1885		2740	2766	393
1849		4843	2285	864	1886		2740	2474	367
1850		4319	2163	902	1887		2495	2590	309
1851		4821	2377	990	1888		2428	1912	256
1852		4871	2417	927	1889		2945	3330	416
1853		3414	2363	789					
1854		5145	2495	801	1890	196	3440	3328	599
1855		5283	2671	742	1891		3249	3256	562
1856		5287	2362	606	1892		3053	3494	492
1857		5087	2341	473	1893		2620	3366	576
1858		5215	2378	476	1894		1957	2729	566
1859		5498	2410	503	1895		1928	3427	666
1860		4623	1787	496	1896		2111	3392	655
1861		4290	2393	625	1897		2757	3257	550
1862		3588	2282	703					
1863		4493	2488	571					
1864		4992	2599	509					

Source: To 1858 as Table 2, thereafter Parliamentary Papers (1898, C11), pp 178-9.

Note: * Harvest year to 1858-59, calendar year thereafter.

Table 5
Index to Cereal Sales

	Wheat	Barley	Oats
1828-34*	100	100	100
1835-41*	120	116	99
1842-48*	117	87	66
1842-47*	100	100	100
1848-53*	81	86	51
1854-58*	94	93	36
1859-64	83	88	33
1865-70	100	100	100
1871-76	84	104	74
1877-82	62	101	81
1883-87	100	100	100
1885-89	97	96	88
1890-95	100	100	100
1892-97	89	100	101

Source: Table 4.

Note: * Harvest years

V

What conclusions can be drawn about the validity of the averages? Clearly no reference can be made to a national price before 1821 unless the data is reworked to allow for varying sales in the different markets. Moreover, the figures themselves are suspect because the weighting system employed encouraged both legal and illegal manipulations of the averages. After the alteration of the weighting procedure in 1821, and especially after the revision of the list of towns in 1828, reasonable confidence can be had in the *weekly* national average as a fair reflection of the actual market situation. Certainly there were problems of inspectorial inertia and dealer malpractice, but incorrect averages at any

particular market did not necessarily invalidate the over-all average. It is possible that from the early 1840s the use of excisemen improved the quality of the inspectorate, but this could have been offset by the corn dealers' seeing little point in supplying information once the Corn Laws had been repealed. Finally, there is a suggestion that the average was slightly inflated in the 1870s and 1880s by the increased consumption of corn on the farm and by the use of improper weights and measures.

Less confidence can be placed in the *annual* averages unless they are recalculated using a more correct weighting procedure, as has been done in Table 2 for 1828-59. Without the time or resources to replicate the studies of historians who have used the averages, it can only be suggested that their work be read bearing this paper in mind, and that where feasible the new figures be substituted for the old. In many cases the revisions called for by the new weighting system will be marginal; nevertheless, in the interests of historical accuracy they should be made. In other instances, however, the use of the more accurately weighted averages will be significant. For example, according to the official statistics the price of barley in 1847 was 35 per cent above the previous year's level, but the recalculated average shows that the actual increase was less than half this; and in 1845 reweighted figures for wheat convert an official price fall into an actual price increase. Such differences between the official and recalculated averages, even if only occasional, emphasize the need to exercise caution when quoting the results of any studies involving national cereal prices.

Finally, there are the annual aggregated sales figures. These can be used in index form as proxy measures to indicate trends in cereal production. They are less reliable as guides to the state of individual harvests, but even here the author's on-going research suggests that if used in conjunction with import statistics and contemporary estimates the sales figures might prove useful.

The corn averages are imperfect statistics. Nevertheless, if used with care they can throw light on cereal prices and production in nineteenth-century England. They cannot be dismissed as readily as they were by Henry Francis Moore, an agricultural journalist,

who in his evidence to the Select Committee on the Corn Averages claimed that 'they are not worth the paper that they are written on'.⁶²

⁶² S.C. on Corn Averages (BPP 1888, X) Q 1121.

Appendix

The Weighting System for Wheat 1819

(week ending 16 January)

(1) Towns

	Quantity sold qtrs*	Average s d	% weight in district average	% district sales	% weight in national average	% national sales
<i>First district</i>						
London (Mark Lane)	4576	72-7	100.0	100.0	8.33	17.51
<i>Second district</i>						
Ipswich	626	78-0	8.3	15.5	0.69	2.40
Woodbridge	515	76-11	8.3	12.8	0.69	1.97
Sudbury	317	78-10	8.3	7.8	0.69	1.21
Hadleigh	609	82-10	8.3	15.1	0.69	2.33
Stow Market	274	76-11	8.3	6.8	0.69	1.05
Bury	297	76-4	8.3	7.4	0.69	1.14
Beccles	103	78-0	8.3	2.6	0.69	0.39
Bungay	94	75-7	8.3	2.3	0.69	0.36
Lowestoft	135	76-0	8.3	3.3	0.69	0.52
Cambridge	634	77-4	8.3	15.7	0.69	2.43
Ely	64	71-7	8.3	1.6	0.69	0.24
Wisbeach	367	75-8	8.3	9.1	0.69	1.40
<i>Third district</i>						
Norwich	1739	77-11	8.3	25.6	0.69	6.65
Yarmouth	340	77-7	8.3	5.0	0.69	1.30
Lynn	1268	75-7	8.3	18.7	0.69	4.85
Thetford	50	76-0	8.3	0.7	0.69	0.19
Watton	10	73-0	8.3	0.1	0.69	0.04
Wymondham	76	76-0	8.3	1.1	0.69	0.29
East Dereham	10	74-0	8.3	0.1	0.69	0.04
Harleston	39	77-1	8.3	0.6	0.69	0.15
Holt	60	76-0	8.3	0.9	0.69	0.23
Aylesham	82	76-5	8.3	1.2	0.69	0.31
Fakenham	3030	74-8	8.3	44.6	0.69	11.59
Walsingham	87	76-4	8.3	1.3	0.69	0.33

	Quantity sold qtrs*	Average s d	% weight in district average	% district sales	% weight in national average	% national sales
<i>Fourth district</i>						
Lincoln	452	80-0	6.7	10.0	0.56	1.73
Gainsborough	391	81-6	6.7	8.7	0.56	1.50
Glamford Briggs	273	78-4	6.7	6.0	0.56	1.04
Louth	357	79-0	6.7	7.9	0.56	1.37
Boston	482	76-1	6.7	10.7	0.56	1.84
Sleaford	70	82-3	6.7	1.5	0.56	0.27
Stamford	702	80-1	6.7	15.5	0.56	2.69
Spalding	17	74-0	6.7	0.4	0.56	0.07
York	141	79-6	6.7	3.1	0.56	0.54
Bridlington	16	77-0	6.7	0.4	0.56	0.06
Beverley	447	74-7	6.7	9.9	0.56	1.71
Howden	172	78-0	6.7	3.8	0.56	0.69
Hull	651	73-11	6.7	14.4	0.56	2.49
Whitby	122	79-0	6.7	2.7	0.56	0.47
New Malton	226	72-10	6.7	5.0	0.56	0.86
<i>Fifth district</i>						
Durham	99	73-10	8.3	6.1	0.69	0.38
Stockton	81	75-6	8.3	5.0	0.69	0.31
Darlington	79	78-0	8.3	4.8	0.69	0.30
Sunderland	31	72-2	8.3	1.9	0.69	0.12
Barnard Castle	68	78-5	8.3	4.1	0.69	0.26
Wolsingham	45	80-0	8.3	2.8	0.69	0.17
Belford	48	64-0	8.3	3.0	0.69	0.18
Hexham	28	76-0	8.3	1.7	0.69	0.11
Newcastle	605	74-2	8.3	37.3	0.69	2.31
Morpeth	172	70-4	8.3	10.6	0.69	0.66
Alnwick	129	67-4	8.3	8.0	0.69	0.49
Berwick	230	64-11	8.3	14.2	0.69	0.88
<i>Sixth district</i>						
Carlisle	21	77-4	16.7	7.3	1.39	0.08
Whitehaven	36	80-0	16.7	12.5	1.39	0.14
Cockermouth	120	73-4	16.7	41.8	1.39	0.46
Penrith	90	81-2	16.7	31.4	1.39	0.34
Appleby	18	86-0	16.7	6.3	1.39	0.07
Burton	1	85-4	16.7	0.3	1.39	—

	Quantity sold qtrs*	Average s d	% weight in district average	% district sales	% weight in national average	% national sales
<i>Seventh district</i>						
Liverpool	89	76-4	8.3	10.5	0.69	0.34
Ulverstone	14	90-0	8.3	1.6	0.69	0.05
Lancaster	73	85-4	8.3	8.6	0.69	0.28
Preston	41	74-4	8.3	4.8	0.69	0.16
Wigan	71	77-8	8.3	8.3	0.69	0.27
Warrington	200	75-2	8.3	23.5	0.69	0.77
Manchester	—	—	8.3	—	0.69	—
Bolton	66	77-4	8.3	7.8	0.69	0.25
Chester	195	78-2	8.3	22.9	0.69	0.75
Nantwich	101	76-8	8.3	11.9	0.69	0.39
Macclesfield	—	—	8.3	—	0.69	—
Stockport	—	—	8.3	—	0.69	—
<i>Eighth district</i>						
Holywell	23	74-10	6.7	7.1	0.56	0.09
Mold	9	74-6	6.7	2.8	0.56	0.03
Denbigh	66	67-2	6.7	20.4	0.56	0.25
Wrexham	15	87-6	6.7	4.6	0.56	0.06
Llanrwst	12	87-2	6.7	3.7	0.56	0.05
Ruthin	88	81-5	6.7	27.2	0.56	0.34
Beaumaris	—	—	6.7	—	0.56	—
Llannerchymedd	10	71-0	6.7	3.1	0.56	0.04
Almwhch	—	—	6.7	3.1	0.56	—
Carnarvon	71	81-0	6.7	21.9	0.56	0.27
Pwlheli	4	80-0	6.7	1.2	0.56	0.02
Conway	14	84-0	6.7	4.3	0.56	0.05
Bala	3	91-4	6.7	0.9	0.56	0.01
Corwen	8	92-6	6.7	2.5	0.56	0.03
Dolgelly	—	—	6.7	—	0.56	—
<i>Ninth district</i>						
Cardigan	3	94-4	8.3	1.7	0.69	0.01
Lampeter	—	—	8.3	—	0.69	—
Aberystwith	11	84-0	8.3	6.1	0.69	0.04
Pembroke	—	—	8.3	—	0.69	—
Fishguard	18	81-1	8.3	10.1	0.69	0.07
Haverfordwest	10	67-0	8.3	5.6	0.69	0.04
Carmarthen	59	78-4	8.3	32.9	0.69	0.23
Llandilo	3	96-0	8.3	1.7	0.69	0.01
Kidwelly	45	80-0	8.3	25.1	0.69	0.17
Swansea	12	82-6	8.3	6.7	0.69	0.05
Neath	16	87-4	8.3	8.9	0.69	0.06
Cowbridge	—	—	8.3	—	0.69	—

	Quantity sold qtrs*	Average s d	% weight in district average	% district sales	% weight in national average	% national sales
<i>Tenth district</i>						
Gloucester	79	80-2	6.7	6.4	0.56	0.30
Cirencester	225	85-0	6.7	18.3	0.56	0.86
Tetbury	79	77-6	6.7	6.4	0.56	0.30
Stow on Wold	60	85-0	6.7	4.9	0.56	0.23
Tewkesbury	16	80-8	6.7	1.3	0.56	0.06
Bristol	225	76-4	6.7	18.3	0.56	0.86
Taunton	180	77-3	6.7	14.6	0.56	0.69
Wells	40	78-0	6.7	3.3	0.56	0.15
Bridgewater	34	81-6	6.7	2.8	0.56	0.13
Frome	11	83-5	6.7	0.9	0.56	0.04
Chard	199	77-2	6.7	16.2	0.56	0.76
Monmouth	50	81-4	6.7	4.1	0.56	0.19
Abergavenny	9	92-0	6.7	0.7	0.56	0.03
Chepstow	8	71-11	6.7	0.7	0.56	0.03
Pontypool	11	89-6	6.7	0.9	0.56	0.04
<i>Eleventh district</i>						
Exeter	258	80-4	8.3	51.2	0.69	0.99
Barnstaple	64	73-4	8.3	12.7	0.69	0.24
Plymouth	16	76-0	8.3	3.2	0.69	0.06
Torress	14	72-10	8.3	2.8	0.69	0.05
Tavistock	44	81-11	8.3	8.7	0.69	0.17
Kingsbridge	15	75-9	8.3	3.0	0.69	0.06
Truro	19	77-4	8.3	3.8	0.69	0.07
Bodmin	21	74-8	8.3	4.2	0.69	0.08
Launceston	7	74-0	8.3	1.4	0.69	0.03
Redruth	11	80-0	8.3	2.2	0.69	0.04
Helstone	18	79-10	8.3	3.6	0.69	0.07
St Austell	14	77-4	8.3	2.8	0.69	0.05
<i>Twelfth district</i>						
Blandford	23	74-8	6.7	1.5	0.56	0.09
Bridport	159	75-0	6.7	10.3	0.56	0.61
Dorchester	130	71-5	6.7	8.4	0.56	0.50
Sherborne	31	77-9	6.7	2.0	0.56	0.12
Shaston	62	78-10	6.7	4.0	0.56	0.24
Wareham	54	74-2	6.7	3.5	0.56	0.21
Winchester	150	76-6	6.7	9.7	0.56	0.57
Andover	67	80-7	6.7	4.3	0.56	0.26
Basingstoke	237	78-3	6.7	15.3	0.56	0.91
Fareham	255	75-0	6.7	16.4	0.56	0.98
Havant	44	69-10	6.7	2.8	0.56	0.17
Newport	159	73-0	6.7	10.3	0.56	0.61
Ringwood	89	76-8	6.7	5.7	0.56	0.34
Southampton	6	64-0	6.7	0.4	0.56	0.02
Portsmouth	82	71-2	6.7	5.3	0.56	0.31

(2) Districts

	Quantity qtrs*	Average s d	% weight in national average	% national sales
First	4576	72-7	8.3	17.5
Second	4039	77-0	8.3	15.5
Third	6793	75-10	8.3	26.0
Fourth	4519	77-8	8.3	17.3
Fifth	1620	72-11	8.3	6.2
Sixth	287	80-6	8.3	1.1
Seventh	851	79-0	8.3	3.3
Eighth	324	81-3	8.3	1.2
Ninth	179	83-4	8.3	0.8
Tenth	1229	81-1	8.3	3.8
Eleventh	504	76-11	8.3	1.9
Twelfth	1551	74-5	8.3	5.5

Source: S.C. on Petitions Relating to Agricultural Distress (PP 1820, 11), Appendix A.

* Bushels have been omitted

Notes and Comments

WINTER CONFERENCE, 1979

The Winter Conference was held jointly with the Historical Geography Research Group of the Institute of British Geographers on 1 December 1979, at the Polytechnic of Central London, New Cavendish Street, London NW1. The meeting was attended by over fifty members and heard papers presented by Mr C J Harrison (University of Keele), 'Fire on the Chase: rural discontent in sixteenth-century Staffordshire'; Dr D J Ormrod (University of Kent), 'Grain riots and government policy in the eighteenth century'; Mr A Charlesworth (University of Liverpool), 'The English rural proletariat and its role in popular disturbances, 1750-1850'; and Mr M Cleary (University of Cambridge), 'Agricultural Syndicalism in the Massif Central, 1900-60'. Thanks were expressed to Drs A D M Phillips and D A Baker for organizing the Conference.

SPRING CONFERENCE, 1980

The Spring Conference of the Society will be held at Pantycelyn Hall, the University College of Wales, Aberystwyth, 14-16 April 1980. Speakers will include Dr John Broad, Dr Eric Kerridge, Professor Donald Winters, and Dr Forrest Capie. Dr Richard Colyer is acting as local conference secretary. Full details and booking forms should appear in this issue of the *Review*, but in case of any difficulty, members should write to the Secretary of the Society.

LAXTON

At the time of writing, there is still doubt about the future of the Nottinghamshire village of Laxton, which is threatened with sale as part of the Government's economy measures. Laxton was the central subject of the classic work by C S and C S Orwin, *The Open Fields* (Oxford, 1938). In order to preserve the village's unique open field system of farming, and to assist the tenants to meet the demands of the future, the estate was sold to the Ministry of Agriculture by the sixth Earl Manvers in February 1952. The Society joins with the tenants themselves in opposing the proposed sale and to this end passed the following resolution at its Winter Conference on 1 December 1979:

'The British Agricultural History Society views the proposed sale of Laxton with the gravest concern. The village and its open field system are a unique element of our historical heritage and must not be sacrificed for short-term economies. While welcoming Her Majesty's Government's assurances on the conditions of sale as a step in the right direction, it reaffirms its belief that the only sure means to preserve this vital element of Britain's heritage is to maintain its ownership in the hands of the nation.'

Copies of this resolution were sent to the Minister of Agriculture, the relevant opposition spokesmen, and to the Press.

(continued on page 30)

The Development of Pastures and Meadows during the Sixteenth and Seventeenth Centuries

By CAROLINA LANE

AGRICULTURAL historians have given scant attention to livestock feeding in the early modern period,¹ though an examination of the patterns in England from 1500 to 1700 shows that dramatic changes took place. Two developments were the cultivation of the grazing unit, and the introduction of clovers, as both a ground cover for grazing and as a fodder for the overwintering of livestock. A third change, the evolution of ideas of livestock nutrition, will not be discussed in this paper.

At the beginning of the sixteenth century livestock were essentially scavengers upon the bits and pieces of land that were allocated for their provision. Very little fodder was deliberately cultivated for winter feeding, and most farmers made no conscious effort to expend energy for the production of food for livestock. In those areas of England where there was both arable and livestock rearing, livestock feeding was merely an adjunct to the arable, so that stock was fed upon the stubble of arable crops and whatever land could be grazed. Rearing in the early sixteenth century was extensive in nature — large tracts of land were necessary to provide food for the livestock. The ratio of land to stock was high, and land was the limiting factor in the number of livestock that could be raised. This, however, was no longer the case by the end of the seventeenth century. A second feature of sixteenth-century livestock raising was that the types of ground cover available for grazing were those which grew naturally in the particular environment. Generally farmers did not use special seeds for their grazing areas at the beginning of the sixteenth

century, except for an occasional use of vetches.

The major purpose of this paper is to examine as biological entities the several types of land used for the rearing of livestock, and to survey the sixteenth- and seventeenth-century literature about pasture management in order to document the changes in livestock feeding. The object is to show that increases in the amount of ground cover in these cultivated units took place, which in turn changed the ratio of land to animals. More animals could thus be reared on natural pasturage. These changes were not uniform all over England, but where they did occur the changes in the management of grazing can be documented and perhaps extrapolated. The changes probably took place on land which was either enclosed or held in severalty; land which was managed in common was not generally given the extra energy input because the management of the commons had to receive the consent of the community.

I *The Ecology of Pastures and Meadows*

During the sixteenth century land used for grazing and mowing was not cultivated for that purpose. In terms of habitats, either natural or man-made, six kinds of land provided feed for livestock. These included wastes which bordered the edges of villages and parishes; the ground cover on the fallows, which may have had a catch crop of vetches; the stubble left on arable lands after the harvest; woodlands which were browsed and/or grazed for fruits and herbaceous plants; meadows, which are lands which border running water and are liable to floods; and pastures which are drier, and may or may not form part of the commons. Biologically, two distinct types of pastures and meadows can be

¹ Livestock is used throughout to include cattle, horses and sheep, acknowledging that regional differences existed in the proportions of these various animals.

discerned: those which were solely grazed, and those which were mowed and grazed. The species of plants and their densities depended on patterns of grazing and mowing as well as the environmental conditions of the particular area. Farmers made essentially no energy input into these seemingly unproductive lands: thus the edaphic factors were probably the major determinants of the species which grew there. At the beginning of the sixteenth century these six classes of land provided the major part of the food for livestock for most of central and eastern England. In some areas of the north and western region of England soil, climatic and topographic considerations allowed only the extensive type of livestock rearing on large tracts of natural grasslands.

The changes brought about in the units cultivated for more food became apparent after an examination of these natural grazing lands from an ecological viewpoint. Three major ecological niches exist with respect to moisture, with all possible gradation within them: they are xeric — dry (deserts); hydric — wet (marshes and the edges of ponds); and mesic — an intermediate stage (woodlands). Arable land is essentially in a xeric condition, because the land has been cleared of all growth and an extensive ground cover no longer helps conserve moisture. Ecologically, several climaxes or steady states or equilibriums occur naturally. The amount of physical disturbance which occurs in an area is a major factor in succession, succession being the natural evolution of plants and animals as dictated by type of soil, climatic factors of light and water, and the species which are present. Any area not disturbed by man by widespread grazing, or by natural catastrophic events undergoes several stages of succession and eventually reaches the climax steady state for that particular environment. Some of these climax areas are grasslands, characterized by low annual rainfall; deciduous forests, areas of medium amounts of rainfall and temperate climate; coniferous forests, which have higher rainfall and are in cooler temperate regions; and

deserts, hot or cold areas with very little rainfall. The life forms in the climax conditions have reached an equilibrium. Any widespread interruption of an environment alters the natural succession pattern. The common rapid succession pattern which occurs when a deciduous forest is cut down has an initial phase in which grasses and herbs invade the area. This leads to a shrub phase, in which a wide variety of herbs, shrubs, and tree seedlings occur, and from this stage the area eventually returns to the deciduous phase. An important point about succession is that the plants and animals alter the habitat themselves, and thereby create conditions which allow for the next wave of succession.²

Although natural succession is prevented from reaching a steady state by the agricultural practices of ploughing, grazing or planting seeds, succession patterns can still be described. Continual disturbance of the habitat by agricultural practices favours those plants which can invade and colonize disturbed areas and become successful. These are predominantly the annual, biennial, and perennial herbs, some mosses, and ferns, plant species which become the ground cover upon which the livestock feed. An important feature of the sixteenth-century environment is that the plant species which grew without requiring man to supply the seed were predominantly native to the British Isles. The plant population of the British Isles in the early sixteenth century was relatively stable, though the changes in agricultural practices from 1500 to 1700 brought about an increase in the number of species which grew naturally because some of these new species colonized successfully and became naturalized, that is, they no longer required man's cultivation. Another factor which influenced early pasturage is that farmers in the sixteenth century rarely added many nutrients to the soil, for the only fertilizers available were marl, lime, manure, and vegetable wastes. These two factors meant that the actions of

² Henry J Oosting, *The Study of Plant Communities*, 2nd edn, San Francisco, 1956, pp 240–8.

man, as compared to his livestock, had very little influence on plant succession in sixteenth-century pastures and meadows.

Two studies have been carried out from which we can make reasonable deductions about English grasslands before cultivation and sowing of seeds became established for livestock feeding lands. The first by H Baker examined the meadow and hay fields in Oxfordshire, while the second by Winifred Brenchley is a long-term descriptive study of the plants growing in the Park Grass Plots at the Rothamsted Experiment Station, Hertfordshire. The data from these two studies illustrate the species present and their relative abundance, and can be extrapolated to much of the grass/grazing lands in the midland area of England. Three habitats have been examined in these studies, an area adjacent to a river which was only grazed, an area adjacent to a river which was mown for hay and then grazed, and a dry field which was mowed for hay. In any grazed or hayed habitat one of the major factors which determines succession is the time of the year when the land is grazed or mowed. Grazing early in the growing season inhibits the perennial species from becoming fully established or dominant, and thereby increases the number of short-lived, annual species during the summer months. Continual mowing without any input of nutrients depletes the soil, and numerous species will invade, some of which will even flourish, although their density will be lessened. Over-grazing of an area also results in an increase of species and decrease of density.

On the Thames above Oxford two types of meadows exist which have been used as common land for several centuries. The largest plot of land is the Commons, Port Meadow, which has been used solely for the grazing of livestock. This 400-acre tract can be further divided into three parts whose species are determined by the amount of flooding of the river and the length of time the water stands upon the land. Pixey, Oxei and Yarnton Mead are three smaller parcels of

land which are used as hay meads and then grazed from autumn until March. The floristic data include some 95 species which occur on these contiguous parcels; however, only 56 species occur in Port Meadow, of which 30 species also occur on the hay meads. The total number of species on the hay meads is 69, of which 39 are unique to the hay meads. The species distribution is further divided into those species which predominate on the wetter parts of the land, and those which were found only on the drier parts. In the smaller area of the hay meads, 270 acres, a greater number of species occurred than on the grazed lands. One of the conclusions that the author reached was that grazing had considerable effect upon the species which would be present and on those life forms which are rosette or creeping predominate. Baker states that on the wetter edge of Port Meadow, 'Were the grazing factor removed it appears likely that the vegetation of this section would develop as a typical marshland community in seral succession. . . .'³

The Park Grass plots at Rothamsted were set aside in 1856, and have no records of deliberate sowing of seeds. This study of a natural grassland has used various types of nutrients as variables to demonstrate the difference in the numbers and types of plant species present and their densities. Each year the several plots are mowed, and the weight of the clippings and number of species present have been recorded. Two of the plots, 2 and 3, have had no manures or nutrients added, although one-half of each plot has had some applications of lime. The other twenty-one plots have had various types and amounts of nutrients added. Comparison between these different programmes demonstrates the wide variety of differences between active pasture management and leaving the land to the mechanical effects of grazing or mowing.

The average number of species in plots 2 and 3 was 35 from 1903 until 1949. Plot 3 had

³H Baker, 'Alluvial Meadows: A Comparative Study of Grazed and Mown Meadows', *Journal of Ecology*, XXV, 1937, pp 408-20.

the greatest fluctuations, from 27 species recorded in 1919 to 43 species recorded in 1903. The variations in plot 2 were from 31 species to 35 species.⁴ Brenchley described plot 3 as 'Herbage of a characteristic poverty-stricken type, yielding a very small crop, and consisting of a large number of species, of which few are strikingly in evidence in most seasons. The plants are nearly all low growing, and tend to form leaves close to the ground rather than much top growth. . . . Starts into growth late in spring. Yield very low . . . species subject to considerable seasonal fluctuations.'⁵ She also made an observation which is critical to my argument: 'N.B. — A species may almost disappear in one season only to reappear in relatively large amount in later years.'⁶ By contrast the average number of plants in plot 11, in which high amounts of nitrogen, superphosphate, potash, soda, and magnesia were added, was only 8.5, with fluctuations from 7 to 10 species.

Although the number of species was much smaller than on the control plots, the yields were consistently considerably higher. The average number of hundredweights that were cut from these twenty plots from 1920 to 1963 was 30.1. The average number from plot 2 was 14.4, and for plot 3 12.5. In contrast the averages for the two sections of plot 11 for the forty-four years were 46.2 and 52.7. The predominate species in the high-yielding plot 11 were the grasses because the legumes had lost their competitive advantage through the heavy concentrations of nitrogen. These data emphasize that in contrast with the fertilized plots more varieties of plants occur within these unseeded plots, although the over-all yields are less.⁷

Direct comparisons between the Rotham-

sted data and the Yarnton commons are not possible because the Oxford study reported only the frequency of species and not percentages of the whole. We can compare the variety of species recorded in the two studies. Forty-three species were found in plots 2 and 3 at Rothamsted. Of these 20 are common to the Hay meads, in which 69 different species were recorded. The greater variety of species in the meads is most likely caused by its location beside a river and the topographic features that allow standing water.

From these data we can assume that sixteenth-century unmanaged pastures and meadows had a large variety of plant species present, few of which were in evidence all year round. The volume, mass, and thus caloric value that these many varieties produced, were low. The factors which affect the species distribution were the edaphic ones, the location, and the mechanical effects of grazing and mowing. These two studies give us a reasonable profile of what most of the pastures and meadows of central England must have resembled during the sixteenth and early seventeenth centuries.

II Sixteenth- and Seventeenth-century Agricultural Writing

A survey of the agricultural literature from Sir Anthony Fitzherbert in 1523 to John Worlidge of the late seventeenth century reveals a striking change in the way livestock feeding, meadows, pastures, fodder, and plants for livestock care were perceived. The most important occurrence is that during this period the concern for calories for livestock feeding became an active rather than a passive concern. In England previous to the sixteenth century pastures and meadows were not consciously managed, and livestock were fed from plants which were available as a concomitant to other farming activities. By the end of the seventeenth century methods of pasture management had evolved which included enclosure, use of leys, the leaving of land for grazing as either a part of a rotation

⁴ Winifred E Brenchley, *The Park Grass Plots at Rothamsted, 1856-1949*, rev Katherine Warington, Harpenden, Rothamsted Experimental Station, 1958.

⁵ Winifred E Brenchley, *Manuring of Grassland for Hay*, 1924, pp 9-10.

⁶ *Ibid*, p 11.

⁷ 'Hay, The Park Grass Plot, 1856 onwards', in Rothamsted Experimental Station, *Details of the Classical and Long Term Experiments up to 1967*, Harpenden, 1970, pp 34-43.

system or for longer terms, and ploughing and sowing of seeds for grazing or fodder.

The late thirteenth-century treatise of Walter of Henley and its variations mentioned livestock feeding only in pointing out that three gradations of pastures existed: very good, good and very bad. It mentioned the number of livestock that could be kept upon the different types of land, but not the number per acre. No comments or suggestions were made on how to improve feeding lands or prevent their natural deterioration. Fitzherbert, in both his *Boke of Surueyng* and *Boke of Husbandry*, mentioned the feeding of livestock, but like Walter of Henley he showed only very passive concern. Fitzherbert suggested that hay be mown at the end of June because 'it is not convenyent to have hay and corne bothe in occupacion at one tyme'.⁸

Barnaby Googe's translation of Conrad Heresbach's *Foure Bookes of Husbandrie* represents a further confirmation of the passive interest in the over-all feeding of livestock. His comments on the rearing of horses are typical:

He that hath a fancy too breede horses, must first prouide himselfe of a good race, then of a good ground, and plenty of pasture, which in other Cattell, ought not be so greatly obserued.⁹

Then follow several pages about the characteristics a horse should have, but no specific instructions are given on the feeding of the horses, other than by good ground and good pasture. Leonard Mascall, in his *The First Booke of Cattell* in 1587, was also cursory in his instructions for the feeding of livestock:

The keeper and gouernour of cattel must always be diligent to forsee that his cattel have meate in due season, and that his stalls be cleanly kept. . . .¹⁰

Mascall further advised that a good man should be sought who will 'feed or see that they have sufficient meat and water dayly at couenient times . . . and . . . to help him with medicine.' He did state that 'the best and most frankest grasse is that which groweth

amongest errable groundes and furrowes, rather than medowe which are wette or moyst'.¹¹ Yet when he came to the diseases and cures for livestock, Mascall gave very specific details for the types of apothecary's drugs which should be used for their care.

The prevalent attitude towards the management of pastures and meadows was taken from the classical authors. As Cono, the landowner, states in Barnaby Googe's 1577 translation of Heresbach:

yet other olde wryters doo most of all preferre Pastures, as the grounde that requireth least a doo about it: and therefore they were called as Varro sayth, *Prata*, because they were *parata*, always in redinesse, and needed neither great charge nor labour. . . .¹²

Fitzherbert's work on surveying has two chapters dealing with pasture and meadow management. In the chapter 'To amende and make better, dyuers maners of pastures' he listed the types of land, and stated that some pastures were previously used as arable, but he did not indicate how to improve such pasture lands. 'Bushy ground which has been arable' may have been land which was browsed by livestock, which does not wholly prevent succession. The pastures did not have constant care and management. The following chapter was entitled 'Howe to amende ley grounde, the which hath ben errable land of late.' In this section Fitzherbert suggested that if the terms of the lease were favourable, the husband should drain and plough in the spring to let the mosses rot, and if by winter moss was still there he should plough again and sow 'with dyuers cornes'. The methods which Fitzherbert presented are slightly contradictory. He recognized that grasslands often needed improvements but he did not detail a specific regimen. Quiche grass was the only plan Fitzherbert mentioned as a good hay.¹³

Fitzherbert's usage of the word ley is

¹¹ Ibid, p 213.

¹² Heresbach, op cit, p 44.

¹³ More than likely this is *Agropyron repens*, now considered to be 'a noxious and persistent weed': A R Clapham, T G Tutin and E F Warburg, *Flora of the British Isles*, 2nd edn, Cambridge, 1962, p 1157.

⁸ Master Fitzherbert, *The Boke of Husbandry*, 1523, p xiv.

⁹ Conrad Heresbach, *Foure Bookes of Husbandry*, trans Barnaby Googe, 1577, p 112.

¹⁰ Leonard Mascall, *The First Booke of Cattle*, 1587, p 51.

worth exploring, because leys became an important part of pasture management during the seventeenth century.¹⁴ He used the term ley to identify land which had been set aside to regain heart:

Nowe euery husbände hath sixe seuerall closes, whereof thre be for corne, the fourth for his leyse, the fyfte for his comen pastures, and the sixte for his hay: and in wynter tyme there is but one occupied with corne. . . .¹⁵

Thus the husband could use the other five closes for his different livestock after the hay was mown and the corn harvested. Fitzherbert's advocacy of the use of leys implied that land was relatively abundant. The tenant often had an excess of land, or made extensive use of land because rents had not yet begun to climb. He noted that if any of the three closes used for corn were worn then the farmer could plough up the ley and

lette the other lye for a tyme, and so shal he haue always rest grounde, the which will beare moche corne with lytell dong . . . and also he shall haue great profite of the wode in the hedges when it is growen.¹⁶

John Norden's *The Surueyor's Dialogue* contained what was apparently the first suggestion that the care of pastures and meadows should be a part of a systematic agrarian activity. Around 1593 Norden began a projected series of county histories, and travelled extensively throughout England collecting information. He was also one of the surveyors of the crown woods during the first decade of the seventeenth century. Norden had the opportunity to observe different farm-

ing practices and to make pronouncements about preferred techniques from his travel observations. Like Fitzherbert, Norden felt that the role of surveyor was to assess the amount and value of holdings, and also to suggest improvements for both tenant and landowner. Improving one's land was stressed throughout the *Surueyor's Dialogue*. In it the Bayly stated that he did not like interference with the natural course of good meadow grounds, to which the Surveyor replied:

You need not feare it, for experience hath found, that it hurteth no kinde of ground . . . (and) Euery thing hath his time and course, a growing, a perfection, and decay. . . . And therefore he that hath best meadow grounds, if he be a good husband, will obserue how they stand in force, or weaknes, and accordingly indeuor to help the defects. . . .¹⁷

Norden classified as pastures all tillable land, and thus included upland meadows as pasture. He distinguished between naturally wet meadows, 'meadowes, the cause of whose goodness is the soyle, and ouerflowing, with the most muddy water', and man-made water meadows. He concluded that meadows 'may be made excellent by charge: but they will decay, unless they be always relieued'. He observed that wet meadows yield by far the greater profit but his instructions for water meadows were vague at best. The management of pasture was in two forms: the rejuvenating of meadow land, including letting it become grazing ground, and ploughing it up and sowing seed. If a meadow had been weakened by too much cutting of hay it should be pasture for several years, or the farmer should carry fat soil and dung to the area and 'cast it abroad upon the meadows, not too thick'. Then the area should be sown with hay dust. His instructions for tilling and sowing meadow/pasture land were to plough it up and leave it fallow for the summer, then plough in the fall and

sow it with pease or fetches, next with wheat, and lastly with fetches and hay dust, laying it as plaine and

¹⁴ Walter W Skeat in his *The Book of Husbandry by Master Fitzherbert*, 1534 edn, London; English Dialect Society, 1882, p 157, defines leys as pasture ground. Perhaps a better definition for leys for the first half of the sixteenth century would be long-term fallow which may have been used for livestock. In Fitzherbert's *Surveying* the word ley does not connote a livestock usage but land in longer fallow. The 1587 will of Richard Collins, Wolvercote, included 'the herbage of Meades leys and closes': M A Havinden, ed, *Household and Farm Inventories in Oxfordshire, 1550-1590*, HMSO, 1965, p 225. This may be an example of a transition towards leys being used for livestock in a rotation with arable. I do not recall seeing the term ley in the seventeenth-century agricultural literature used for this paper.

¹⁵ Master Fitzherbert, *The Boke of Surueyeng*, 1523, p liiii.

¹⁶ Ibid, p liiii.

¹⁷ John Norden, *The Surueyor's dialogue*, 1610, p 164. I would like to thank Dr Thirsk for collating Book Five of John Norden, *The Surueyours Dialogue* of 1607 with Norden's 1610 edition. Book Five of the two editions varies only in typesetting.

leuel as you can. Then seede it the next summer, and after that, hayn it and mowe it, and with in a year or two, the grasse will be fat sweet and good.¹⁸

The Bayly related that if one ploughs pastures on some types of soil:

they will hardly graze againe in 6 or 7 years: yet haue I seen as rich wheat and barley on it, as may well approve the ground to be very fruitful.¹⁹

This is true, for if one only ploughs and leaves the land to fallow, beginning a succession phase, those plants which are in the environs will set seed and invade the fallow. If the farmer did as Norden advised, sowing the area with either hay dust or seeds, 'especially the seed of the clauer grasse, the grasse hony-suckle, and other seeds that fall out of the finest and purest hay', then he had begun to control the species that would be major ground covers in his pastures.²⁰

During the 1650s a flurry of literature on the improvement of agrarian practices was published. Samuel Hartlib was perhaps the pivotal figure of this exchange, and his role in the improvement of agricultural practices in England during the seventeenth century should be examined in greater detail. In 1650 Hartlib published the letter of Sir Richard Weston to his sons, describing the intensive agricultural practices of the Low Countries. The Dutch use of land seemed to have been a turning point for land management:

about April following you may sow the same Land with Oats; and upon them *Clover-grass* seed onely harrowing it with bushes, which will com up after the Oats are mowed, and that year yield you a very great Pasture till Christmas; and the next year following you may cut that grass three times . . . and will continue (as pasture) good four or five years together without sowing it.²¹

The other editions of Hartlib included letters from the vast correspondence which he received. These letters presented empirical observations of the writers, their questions, observations, trials and errors as they tried to improve their agricultural practices. In 1651

one of the correspondents recommended the following regimen for the improvement of pastures:

A *Meadow* yields 6 times more *Hay*, when it is turned up with a plough, and sown thick with ashes burnt out of the substance thereof, but the rain must fall first. Afterwards sow your *Meadow* with the seed of *Trefoil*, and plough and harrow them in.²²

The correspondent then recommended the 'Trefoile' going to seed and seeding itself before mowing.

Clovers

Robert Plot, in his *Natural History of Oxfordshire*, 1677, discussed the flora found in Oxfordshire. One of his headings was 'Of unusual Plants now cultivated in the Fields':

for Grasses, the usual name for any *Herbage* sown for Cattle, especially if *perennial* (to pass by the *trifolium purpureum majus sive sativum*, *Clover-grass*; and *Onobrychis spicata flore purpureo, semine echinato*, commonly called *Saint-foin*, or *Everlasting-grass* . . . now every where known, and therefore nothing concerning the qualities and advantages of it). They have lately sown *Ray-grass*, or the *Gramen Loliaceum*, by which they improve a cold, sour, clay-weeping ground, for which it is best, but good also for dryer up-land grounds, especially *light stony*, or *sandy Land*, which is unfit for *Saint-foin* . . . *trifolium agrarium Dodonaei*, called *Melilot-trefoil*, and sometimes *Non-such* . . . *Trefoil* . . . *saenum Burgundiacum caeruleum L'Obelii* . . . commonly called *Lucern*. . . .²³

Eight years later Edward Fuller, a seed merchant at the May-Pole in the Strand, London, offered, 'Clover-grass, Hop-Clover, Saine-foin, La Lucern, Rye-grass, French Furz, Dantzick-Flax' under the heading 'Seeds to improve Land'.²⁴ These several 'grasses' were among the major plants which were a part of the innovation of improving pastures and meadows.

The major grass (member of the *Gramineae*) in these two lists was rye grass, 'Ray-grasse' (*Lolium perenne*), an indigenous plant of the

¹⁸ Ibid, pp 155, 157.

¹⁹ Ibid, pp 158, 164.

²⁰ Ibid, pp 163, 194.

²¹ Richard Weston, *A Discours of Husbandrie Used in Brabant and Flanders*, 2nd edn, 1652, p 7.

²² Samuel Hartlib, *Samuel Hartlib his Legacy of Husbandry*, 3rd edn, 1655, p 128.

²³ Robert Plot, *The Natural History of Oxfordshire*, Oxford, 1677, pp 150, 155.

²⁴ 'A catalogue of seeds, plants, etc.' sold by Edward Fuller, c 1685. I wish to thank Malcolm Thick for this reference and for supplying a photocopy of the plant list.

British Isles which was not systematically sown or grown for pastures until the middle of the seventeenth century. John Gerard's *Herball*, revised in 1633 by Thomas Johnson, included two *Loliums*, called white darnel and red darnel. The two plants are described thus: Among the hurtfull weeds Darnell is the first. . . . Red Darnel is likewise an unprofitable corne or grasse. . . . They grow in the fields among wheat and barley, of the currupt and bad seed . . . especially in a moist and dankish soile. . . . The Names . . . in English, Darnel: of some Iuray and Raye.²⁵

John Parkinson's herbal of 1640 described the darnels as growing 'either in the fields of corne, or in the borders and path-ways of other fields that are fallow'.²⁶ The transition of rye grass from a weed to a mainstay of British pastures is remarkable and should be explored.²⁷

During the seventeenth century the sowing of 'clovers' became part of the systematic care of pastures and meadows. Historically a discontinuity occurred in their use as a cultivated plant. Evidence exists that some clovers or lupines were used as a green manure, a fodder, and a grazing ground cover for several centuries BC. G W Hendry has suggested that the domestication of lucerne, alfalfa (*Medicago sativa*), follows closely the domestication of the horse.²⁸ Rediscovery of the previously domesticated clovers, and domestication of other clovers, began in western Europe during the late fifteenth century. The introduction and adoption of the clovers in England during the seventeenth century was partially documented by a variety of contemporary writers.

Any discussion of the 'clovers' of the seventeenth century and earlier is beset with numerous taxonomic problems, because the

four important fodder and grazing genera (*Medicago*, *Melilotus*, *Onobrychis*, and *Trifolium*) contain over thirty-one cultivated species, and other leguminous plants were also sown in the seventeenth century.²⁹ A quote from Parkinson regarding the common names of 'Trifolia pratensis, Medow Trefoiles' (?*Trifolium pratense*) shows the extent of the taxonomic problem.

The Names . . . in English, Claver or Clover grasse, and Medow Trefoile or Three leafed grasse, and of many also Hony suckles, because Bees feed much on the flowers. . . .³⁰

For lucerne, alfalfa (*Medicago sativa*), Parkinson included under the heading 'The Names', 'we call it Medick, Fodder and Snaile Claver, or Trefoile'. The terms 'Trefoile' and 'Clover' seem to have specific meanings to their respective authors, but it may be difficult to generalize these meanings for all the seventeenth-century English agricultural literature.³¹ Given the lack of sufficient taxonomic data to make firm pronouncements, this section will try to present a reasonable modern approximation of the taxonomic species used for improving seventeenth-century pastures and meadows.

A few general points about the biology of the clovers are important. These leguminous plants have nodules containing nitrogen fixing bacteria in association with their roots which enable the plants to fix nitrogen and improve the nitrogen content of the soil. Some forms of clover are prostrate and suitable only for grazing, whilst others are erect and thus are suitable for both grazing and producing hay. Clovers include annuals,

²⁵ John Gerard, *The Herball or Generall Historie of Plants*, rev Thomas Johnson, 1633, pp 78-9.

²⁶ John Parkinson, *Theatrum Botanicum: The Theater of Plants*, 1640, pp 1144-6.

²⁷ Rye grass (*Lolium perenne*) was in the original unseeded plots 2 and 3 at Rothamsted in 1856. The largest percentage of rye grass was 1.2 per cent in 1926, and generally was less than 1 per cent in those years in which it has appeared in those plots. Brenchley, op cit.

²⁸ K Lesins, 'Alfalfa, lucerne' in N W Simmonds, ed, *Evolution of Crop Plants*, 1976, p 166.

²⁹ To emphasize the complexity of this problem *Flora Europaea*, ed T G Tutin et al, Cambridge, 1968, II, has 37 species under *Medicago*, 99 species under *Trifolium* and 16 species under *Melilotus*.

³⁰ Parkinson, op cit, pp 1110, 1112.

³¹ The standardization of plant characteristics and specific epithets was introduced by Carl von Linne in his *Species plantarum* published in 1753. The synonymy before 1753 is often difficult to follow as the flower parts were not used uniformly for plant descriptions. Thus Rembert Dodens may have one name, Mathias de L'Obel another, and Charles L'Ecluse yet another name for the same species; and each may have used a different part of the plant as its identifying characteristic.

TABLE 1

Selected characteristics of certain clovers grown in England in the seventeenth century

Clover name	Life-span	Height	Use	Soil
Lucerne <i>Medicago sativa</i>	perennial to 30 years	30–90 cm	Hay and grazing	Sandy loams and heavy clays
Hopclover, Black Medic <i>Medicago lupulina</i>	annual to biennial	5–60 cm	Grazing	Poor soils drained
Sweetclover <i>Melilotus alba</i>	biennial	30–120 cm	Poor hay and grazing	Almost any soil
Yellow sweetclover <i>Melilotus officinalis</i>	biennial	60–120 cm	Grazing	
Sainfoin <i>Onobrychis viciifolia</i>	perennial to 20 years	30–60 cm	Hay and grazing	Drained loams limed, some clays
Crimson clover <i>Trifolium incarnatum</i>	annual	20–50 cm	Hay and grazing	Sands, clay, poor soils
Red clover <i>Trifolium pratense</i>	biennial to perennial	50–60 cm	Hay and grazing	Good soil, well- drained and limed
White clover <i>Trifolium repens</i>	perennial, short-lived	5–50 cm	Grazing, some hay	Sands, loams, clays, drained
Hop trefoil <i>Trifolium campestre</i>	annual to biennial	35–50 cm	Grazing, some hay	
Bird's foot trefoil <i>Lotus corniculatus</i>	perennial	10–40 cm	Grazing	

biennials or perennials, which may affect which species was selected for a particular rotation. Some species have a strong tap root, and are unsuited for heavy clays, whilst other with shallower roots can be used on heavier soils. Some are more aggressive on poorer soils than others. The seed pods are either indehiscent, with seed pods that do not open regularly, or dehiscent, with pods which open easily. Some of these biological constraints undoubtedly had an effect on the adoption of the 'clovers' during the seventeenth century. Table 1 summarizes the main botanical characteristics of those which were probably grown.

William Turner, an English botanist who travelled extensively throughout Europe during the sixteenth century, observed one of the 'medics' growing in Germany, and commented on sowing 'clovers' in a prepared field.³² This was the first recorded English

observation of the practice of sowing 'clovers' which was adopted in the seventeenth century. Googe (Heresbach) and Estienne (Surfleet) translated European comments on 'clovers' as fodder and as plants to be sown for pastures. The botanical literature also contained comments. Gerard's 1633 edition, for example, had fourteen clovers under the heading '*Trifolium*'.³³ Parkinson's *Theatrum Botanicum* described thirty-five kinds of 'clovers'. But Gerard and Parkinson do not include the kinds of comments about their growing which appeared in Turner's herbal, nor were all the 'clovers' they listed suitable for livestock feeding.

³² William Turner, *The First and Second Partes of the Herbal of William Turner*, Collen, 1568, II, p 52.

³³ John Gerard published in 1596 and 1599 lists of the plants which were growing in his garden in Holborn. The plants in these lists were given modern species epithets by Benjamin Daydon Jackson, *A Catalogue of Plants Cultivated in the Garden of John Gerard*, London, privately printed, 1876. Gerard was growing 'Dutch Cocks Head' (*Onobrychis viciifolia*), 'Burgundie hay' (*Medicago sativa*), 'Purplewort' (*Trifolium repens*), 'German Clover' (*Melilotus officinalis*), and 'Great Haresfoot' (*Trifolium incarnatum*).

George Owen travelled through Pembroke-shire in 1603 and observed the natural occurrence of one of the 'clovers':

. . . if the lande bare either furse, fearne, heath, broome, or any other kinde of shrubb the Marle vtterlie destroyeth it, and causeth the grounde, (be it neuer so ill conditioned and barren before) to bringe forth fine grasse full of the herbe called *Trifolium* or three leaved grasse, and of the cuntry people honie suckles' both white and red. . . .³⁴

Credit for introduction of 'clovers' for improvement of pasture and feeding livestock has largely been given to Sir Richard Weston, who travelled extensively in the Low Countries as an exile during the 1640s. Upon returning to England he wrote a tract which described the agricultural practices of the Low Countries, including intensive use of land for food, fodder, industrial plant products, and the sowing of 'clovers' for pastures. Weston's 'clover-grasse' has been assumed to be *Trifolium repens* but may have been *Trifolium pratense*. Indeed it was probably a mixture of several clovers, (*Trifolium* and/or *Melilotus*), which may account partially for the varied experiences Weston reported with 'clover-grasse'. His directions may be condensed as follows:

Clover-grasse Seed thrives best when you sow it in the worst and barrenest ground. Such as our worst heath ground is in England. The ground is thus to be prepared for the Seed . . . plough and sow . . . harrow afterwards, and with bushes under your harrows. . . . An acre of ground will take about ten pounds of your Clover grasse-seed . . . cheif season of sowing it are April or . . . Marsh. About the first of June it will be ready to cut. It yeelds most excellent hay . . . at least five bushels of Seed from every Acre. . . . One Acre of it will feed you as many Cows, as six ordinary Acres. . . . Being once sowed, it will last five years, and then being ploughed it will yeeld three or four years together, rich crops of wheat, and after that a crop of Oats.³⁵

Weston used this method on his land in Surrey, and recommended it to his sons. In one instance he offered his advice to others.³⁶

Andrew Yarranton, in his work on clover in 1663, pointed out that sowing 'clover' 'brings the ground into a fresh capacity of tillage', which could not otherwise occur unless the land was left fallow for a number of years.

I can make it appear, six acres of land in *Clover* will keep as many cattle, as Thirty acres of natural grass; and besides your Land need not now lie out of tillage, so long as it was wont to do; but once in four five years you may break it up, and it shall be as fit for tillage, as though it had lain 20 years with natural grass.³⁷

Yarranton experimented with the optimal time for sowing 'clover seed'. Initially he recommended that it be sown from 10 March until the end of April. Yet after experimenting, he felt that sowing clover in August was best, 'because I find one great enemy to Clover is natural grass'. Yarranton felt that the start which the seedlings would have over winter would shade out competing weeds. He recommended sowing 12 lb of seed per acre on 'gravely dry land' or 'clayland where it drains', and liming the field.³⁸

While Weston and Yarranton dealt solely with the vague heading of 'clovers', other writers were recommending other genera. Blith recommended the use of three 'clovers', 'Trefoyle or great Claver Grass' (*Trifolium pratense*), 'St Foyne' (*Onobrychis viciifolia*) and 'La-Lucerne' (*Medicago sativa*). The species mentioned in the Plot quotation were 'Clover-grass' (?*Trifolium pratense*), 'Saint Foin' (*Onobrychis viciifolia*), 'Ray Grass' (*Lolium preenne*), 'Mililot-trefoil' (*Melilotus officinalis*), 'Trefoil' (?*Trifolium repens*/*Trifolium incarnatum*), and 'Lucern' (*Medicago sativa*).

In 1671 appeared *St Foin Improved*, 'written by a person of honor lately deceased'. This work extolled the virtues of sainfoin (*Onobrychis viciifolia*) as 'that delight in Husbandry'. The soils proper for St. Foin, as those most of dry grounds, and though they be very barren, trial having been made plentifully on Stony and Chalky Grounds. . . .

³⁴ Henry Owen, ed, *The Description of Pembroke-shire by George Owen of Henllys*, 1892, pt 1, p 72.

³⁵ Hartlib, op cit, pp 242-3.

³⁶ A R Michell, 'Sir Richard Weston and the Spread of Clover Cultivation', *Ag Hist Rev*, XXII, 1974, p 160.

³⁷ Andrew Yarranton, *The Improvement Improved by a Second Edition of The Great Improvement of Lands by Clover*, 1663, p 12.

³⁸ Ibid, pp 21, 23.

Sands . . . the Red and Brown, bear it singularly well; all Clays and other cold and wet Grounds bear it not.³⁹

Since sainfoin is a perennial, the author did not recommend that cattle graze upon it during the first year. But after the second year both mowing and grazing were expected. If sainfoin was sown in the spring it was acceptable to oversow with either oats or barley, but if it was sown in the autumn 'it must ever be sowed alone without corne'. The rate of sowing was four bushels per acre. The author suggested that before the farmer lay down sainfoin for a time he make a 'trial whether any Ground will bear it', on a small plot 'about four yards square', to ascertain if the plant would be successful on his land.⁴⁰

The major part of *Hartlib His Legacie* was comprised of correspondence to Hartlib from persons who were experimenting with new agricultural improvements, and the discussions on 'clovers' were an integral part. Unfortunately, most of the correspondents and their locations are not identified. The majority of the comments on 'clovers' affirmed the technique that they should be a part of a several-year rotation, for they both provided livestock food and improved the soil. Robert Child's letter exhorted that England had abounding pastures but neglected the 'great Clover-grass', 'Sainte Foine', 'Lucerne', 'Trefoils', and 'Hop-Trefoil' (?*Medicago lupulina* or ?*Trifolium campestre*). During the seventeenth century 'Saint Foine' and 'La Lucern', although dissimilar legumes, were often confused because both could do well on the poorer soils. If growing sainfoin, farmers were told 'not to expect above 7 years profit by it, for in that time it will decay'. After seven years the field should be ploughed and sown again either with sainfoin or with grains. It was noted about lucerne 'that of once sowing it will continue ten or twelve years'.⁴¹ Both were mown for hay and grazed during the

autumn and winter. From the discussion in Worlidge's 1675 work it seems difficult to decide which to grow, and he states:

St. Foyn . . . hath in several places of England obtained the preference above *Clover-grass*. . . . If it be sown on the poorest and barrenest Land . . . it will thrive . . . *La Lucern* is commended for an excellent Fodder, and by some preferred before *St. Foyn*, as being very advantageous to dry and barren Grounds.⁴²

The improving farmer may well have tried a small plot of each before deciding which would be to his greatest advantage.

One of the problems surrounding the introduction of clovers was the difficulty in obtaining a supply of seed. Contemporary recommendations, such as Yarranton's, suggested that the farmer should send a man to the Low Countries to purchase clover seed; if he obtained extra seed it could be easily sold to one's neighbours. Blith noted that obtaining seed was hazardous:

the transporting of it by sea is no considerable prejudice unto it, but much that is sold in the Seed-mens shops in London was either corrupted by the Dutch . . . or else parched by over-drying. . . .⁴³

Most of the clovers have indehiscent seed pods, which can take years before naturally releasing the seed within the pod. In order to obtain the seed more easily the pods were often dried in a kiln before threshing.

Weston, in a letter of 1650-51, noted that his men could not get clover seed out 'til March' for 'I thinke that it must first be laid abroud a drying in the sun some 3 or 4 hours before it is thresht . . .'.⁴⁴ He wanted to try and thresh the seed in the field during the summer but the weather had been inclement. Lady Ranelagh was said to have used a mill in order to remove the husks from 'clover seeds'.⁴⁵ In 1672 Richard Haynes of Sussex was awarded a patent for 'an invencion or way of severing, divideing, and makeing cleane the said seed called nonsuch trefoye or

³⁹ *St. Foine Improved, a discourse shewing the utility and benefit which England, 1671*, p 17.

⁴⁰ *Ibid*, p 18.

⁴¹ Hartlib, *op cit*, pp 3, 102.

⁴² John Worlidge, *Systema Agriculturae*, 1675, pp 28-9.

⁴³ Walter Blith, *The English Improver Improved*, 2nd edn, 1652, p 179.

⁴⁴ Michell, *op cit*, p 161.

⁴⁵ University of Sheffield, Samuel Hartlib, *Ephemeridis 1652*, BB-BB8. I wish to thank Dr Thirsk for this reference.

hop clover, from it husk, & also from the mixture of course grasse or weed'. The obtaining of clover seed remained a problem.⁴⁶

Some of the letters of the Hartlib correspondence answered the various complaints that clovers took 'the Heart of the Ground, and leave it barren and unfruitful', for not all found the innovation satisfactory.⁴⁷ Part of the problem could have been the different conditions and the types of clovers sown (see Table 1). Another writer felt that 'clover-grass had so poisoned the ground that I had not half a crop this last harvest'.⁴⁸ The establishment of clovers was indeed not always very successful during the seventeenth century. Possibly the necessary *Rhizobium* bacteria were not present in the soil: although clovers have nitrogen-fixing bacteria in their root nodules, these bacteria are not a part of the plants themselves. The bacteria must be present in the soil to establish a symbiotic relationship.⁴⁹ The complaint of John Wood of Dedham, Essex, c 1678 could possibly be explained by a lack of the necessary bacteria. He stated that the clover that he had sown had not been productive, and that the yield was no better than the grasses that were there before. 'That sometimes it is an advantage to the occupier to sow his lands with clover and sometimes not.'⁵⁰

III Conclusion

The comparison of biological features of pastures and meadows in the early sixteenth century versus those of the late seventeenth century has shown that significant ecological developments took place during this period. At the beginning of the sixteenth century

pastures and meadows were generally left in a natural biological state, and the plants which grew were natural concomitants of the soil type, with mechanical interference by either livestock or mowing. By the end of the seventeenth century pastures were systematically cultivated, fertilized and sown with seeds. These changes increased the number of calories per acre available for feeding livestock. The evolution of ley farming or convertible husbandry, in which tillable land was rotated between arable and pasture, was a significant feature of the change. The changes in pasture management combined technical innovations with a change in farming systems: the technical innovations were the ploughing of pasture land and sowing of seeds; the change in farming systems was intensification of land use by elimination of the fallow.

A possible model for the changes in pasture management in the counties north of London as far as Derbyshire can be described. At the beginning of the sixteenth century land which was used for livestock was extensive in nature, and the tenant was not utilizing all of his land; it was still a tenant's market for land. By the 1540s pressures were exerted upon the land, and so leys, which before had simply been excess land which was allowed a longer time to regain heart, were used as grazing lands. During the sixteenth century, apparently, leys began to be used as ancillary pastures, depending upon the location and the ownership of the land, and whether land was in severalty or common fields. About the 1570s these leys became systematically used, and were ploughed up and either left to regain a sward or were used for growing grains and other crops. By the 1590s enough observations had been made to show that a single method could not be applied to all lands, and that the length of time for a good sward to form also varied. Following these observations it appears that farmers began regular sowing of hay dust and seeds of the plants desired in the sward. Thus, by the end of the sixteenth century ploughing up of land and

⁴⁶ Great Britain. British Patent, 1672, No 166, 'A way to Sever, Divide, & Make Cleane the Seed called Nonsuch Trefoyle or Hopclover from itt Huske . . .', issued to Richard Haynes, 1857.

⁴⁷ Hartlib, op cit, p 245.

⁴⁸ Univ of Sheffield, Hartlib MSS, 26/67/1-2, 34/4/21.

⁴⁹ George H Clark and M Oscar Malte, *Fodder and Pasture Plants*, Ottawa, 1923, p 18. When clovers are introduced into new areas inoculum of the specific *Rhizobium* is purchased with the seed for sowing.

⁵⁰ PRO: E 134 33 Char II, East 3.

sowing of seeds for swards was undertaken in some parts of England, and by the middle of the seventeenth century became more common. After 1650 clovers were commonly used. The major results of this systematic care of pastures and meadows were that the farmer had begun to control the species which inhabited his pastures and meadow land, and that the over-all yields of these ploughed-up and seeded lands increased as the competition of natural succession was controlled.

Several factors probably influenced this systematic change in pasture and meadow management: first, the price of livestock products increased throughout the two centuries; second, the population rise of the sixteenth century brought an increased demand for land; third, empirical methods were applied to agriculture as part of the intellectual movement of the seventeenth century, and fourth, the acreage held in

severalty or under the management of enterprising tenants increased. Improving farmers could experiment with new crops by taking small parcels of land and experimenting with them. The observations of one of these farmers engaged in improving farming techniques makes a fitting conclusion to this paper. Andrew Yarranton, writing in 1662, noted 'that knowledge in all arts, especially in Husbandry is attained by industry, observation, often practice, and patience'.⁵¹ This attitude, adopted by many of the improving farmers of the seventeenth century, led to changes in farm management which increased the over-all productivity of English farm lands. By the end of the seventeenth century farmers were using and controlling the natural succession of grasslands to their advantage, and the location of their land was no longer of primary significance.

⁵¹ Yarranton, *op cit*, p 3.

NOTES AND COMMENTS

(continued from page 17)

WILHELM ABEL: AGRARKRISEN UND AGRAR-KONJUNKTUR

Mrs Olive Ordish's translation of Wilhelm Abel's *Agrarkrisen und Agrarkonjunktur* is to be published by Methuen & Co this spring. The Society commissioned the translation many years ago and is pleased at last to see its appearance. The translation incorporates changes made in the recent third edition, and includes an introduction and a select bibliography by Dr Joan Thirsk. The Society has arranged for ordinary members (UK) to purchase copies at a considerable reduction on published price, and a form for this purpose is inserted into the present issue of the *Review*. It should be noted that the offer is restricted to members, and is available only for a limited period. Any enquiries on this matter should be addressed to the Treasurer.

PRINTING OF THE REVIEW

The present issue of the *Review* marks our departure from the previous letterpress printers, Popper & Co, to the lithographic printing unit of the University of Leeds. It is hoped that the change will enable some economies to be made in the future production of the journal, and may make for greater flexibility in the presentation of its contents. No change in format is envisaged, but members may note some differences in its general appearance and in the 'house style' employed. Any comments on these changes should be sent to the Editor.

Corporate Estate Management: Guy's Hospital Agricultural Estates, 1726–1815¹

By B E S TRUEMAN

IN 1755 Dr Benjamin Avery, one of the more active treasurers of Guy's hospital during the eighteenth century, wrote to the charity's Herefordshire agent of the need for early notification of timber and coppice wood sales. During the course of the letter he highlighted one of the main differences, as he saw it, between the management of private and corporation estates:

I can say nothing to it till I have an opportunity of consulting some of our Gentlemen: You shou'd give us a little more time, as you know bodies of men can't answer Letters, give their orders, review, alter, and amend them with so much ease, and in so little time as particular persons can do.²

Later officials were to express similar sentiments. The fear of farms falling in hand made the clerk to the governors declare in October 1780 that:

Public Bodies & Trustees of Charities are in a very different situation from private persons and individuals and cannot with the same ease and propriety vary & cancel Agreemts and take their Farms and Estates into their own hands. . . .³

This letter underlined the problem of institutions which regarded property, above all things, as a source of income. Their corporate nature could make them appear both formal and inflexible. The relationship with their lands was often distant, and this in turn has tended to give them a reputation for being less effective as landowners, and less involved in the affairs of their estates than private landlords. It has also helped to create the impression of institutional estate owners being little more than heartless rackrenters. In

the late nineteenth century Shaw-Lefevre thought that tenants of collegiate and charity properties were treated less favourably than those of private landlords, and he went on to declare that they should consider the interests of all classes living on their land, and not merely aim to make 'the very utmost net income out of it'.⁴

There were certainly a number of dismal examples to confirm this attitude. The Charity Commissioners of the 1830s, for instance, discovered that the burgesses of Huntingdon had done so well out of their charity estates that a notification was sent to the Attorney General.⁵ In 1783 the canons of Hereford cathedral recorded that:

the fines in future for all Leases that shall be granted by the Chapter shall be paid immediately and the Money instantly divided amongst the members of the Chapter.⁶

The canons, in fact, neglected both their estates and their cathedral. While they were dividing considerable sums amongst themselves, the fabric account, which supported the institution from which they derived their profit, was almost annually falling into debt. The disastrous consequence of this neglect occurred less than three years later when, on Easter Monday 1786, the whole of the cathedral's west tower collapsed.

On the other hand, mismanagement also arose from the failure of many trustees to provide their institutions with rents which reflected the real worth of their estates. It was a common abuse to let land well below the market value. The Charity Commissioners discovered, for instance, that an almshouse at

¹ I should like to thank the governors of Guy's hospital for allowing me to use material in their archives, and also Professor A W Coats who helped me with an earlier draft of this article.

² Avery to Fortune, 18 Nov 1755, Treasurers' Letter Book (TLB) 1737–73, p 320; Guy's hospital MS.

³ J Harrison to Jenkin, 12 Oct 1780, TLB 1778–1807, p 32.

⁴ G Shaw Lefevre, *Agrarian Tenures*, 1893, pp 276–7.

⁵ D Owen, *English Philanthropy, 1660–1960*, 1964, p 194.

⁶ 13 Nov 1783, *Dean and Chapter Act Book, 1768–1801*, vol 5, p 231 verso; Chapter Library of Hereford Cathedral.

Ewelme in Oxfordshire received just over 3s an acre from a fine property of 4500 acres.⁷ Even more widespread was the habit of granting very long leases, thereby depriving the institution of rising land values, or of simply reletting for fines with no increase in rent.⁸

To be good and effective landlords, a number of the officials at Guy's hospital at least recognized the need to steer a course between the two extremes of exploitation and neglect. 'We are never forward to raise our rents,' Avery wrote in 1756, 'or screw everything up as far as it will bear.'⁹ Yet, of necessity the hospital itself still had to be the main influence upon the proceedings of the governors, and loyalty to a central institution of this kind could lead to neglect of its landed property. One of the hospital's nineteenth-century governors, William Cripps, told the Mortmain Commission in 1844 that on all charity estates the claims were usually larger than the funds could meet, and thus

in many instances estates had been suffered to get into bad repair, particularly the buildings on them, from the urgent calls there have been on the charity.¹⁰

Guy's hospital held land in Herefordshire, north Essex, and south Lincolnshire. The largest estate, of around 10,000 acres, lay scattered in Herefordshire. This comprised two main parts — the northern division with farmland, some of it heavy clay, stretching to the west and south of Hereford itself, and the smaller southern division taking in some of the light lands around Ross. The Essex property was the next largest, consisting of three areas around Great Bardfield, Leigh's Priory and Beaumont in the north of the county, and the estate as a whole hovered around 8000 acres for most of its history. The smallest estate lay near Wisbech in south Lincolnshire, flanking the Wash, and during the eighteenth century contained just over

5000 acres. It is to the credit of the governors of Guy's that the effect of the charity upon this property was not usually harmful. At the turn of the century they even received some praise from the reporters to the Board of Agriculture for their farm buildings in Herefordshire and a short-lived scheme there for encouraging the growing of turnips.¹¹ Yet the governors could not really be called improving landlords, although in a number of ways the presence of the hospital actually encouraged them to manage their estates with efficiency, and, in general, with consideration. The differences between the management of private and corporate property could be exaggerated, yet they did exist. They were recognized by a number of treasurers, and the most obvious influence was provided by the hospital itself, situated in Southwark, and so generously endowed by its founder, Thomas Guy.

I

Guy died a bachelor in December 1724¹² after a life of active philanthropy. He had first built his fortune in the book trade, and then, during the Marlborough wars, became a dealer in sailors' pay tickets. Government securities also attracted his attention 'by which, and his Trade, he acquir'd a very great Estate'.¹³ It was, however, the South Sea bubble which created a most impressive fortune for this already wealthy man. On his death he left £300,000, mainly in personalty, and over £200,000 of this went towards endowing the hospital which still bears his name. The charity opened its doors to the first patients early in 1726, just over a year after the founder's death. Its establishment brought little controversy. There was some dispute about the original purpose of the hospital, but re-publication of Guy's will in the early 1730s soon settled this matter. The

⁷ Owen, *op cit*, p 195.

⁸ *Ibid*, p 185.

⁹ Avery to Yeldham, 13 Nov 1756, TLB 1737-73, p 345.

¹⁰ House of Commons, *Report from the Select Committee on Mortmain*, 1844, p 108.

¹¹ J Clark, *General View of the Agriculture of the County of Hereford*, 1794, pp 58-59n; J Duncumb, *General View of the Agriculture of the County of Hereford*, 1805, p 30.

¹² New style of dating is used throughout.

¹³ W Maitland, *The History of London*, 1739, p 667.

actual terms of his will were never disputed: there were not only generous bequests for his relatives, but careful instructions about the government of the hospital.

To some extent Guy was influenced by the example of St Thomas's, of which he had been a governor for a number of years. Indeed, in its earliest years Guy's hospital not only shared its treasurer and governors with the sister charity, but on the medical side the training of Guy's students was also closely linked to that of its neighbour until 1837. Yet although undoubtedly influenced by St Thomas's, Guy never followed its example slavishly. He certainly avoided some of its abuses by restricting the number of governors to between fifty and sixty, thus preventing the possibility of a sudden increase in their ranks for support of a particular appointment.

The governors of Guy's also received but few emoluments,¹⁴ while their powers were restricted. The governors were required to appoint the hospital's senior officials, both administrative and medical, and also to present clergymen to any livings the charity might hold. Later by-laws increased their powers to some extent when, from 1728, the general court's consent was required for the purchase, sale, or exchange of any substantial pieces of property. The governors also had to elect by ballot the twenty-one members who comprised the court of committees, seven of whom were chosen each year. It was with this smaller administrative body where the real power of the hospital lay. It dealt with 'the more constant and ordinary Management' of the hospital,¹⁵ and as its meetings were fairly frequent much of the daily work was conducted by the treasurer. He was the presiding officer of the committee; and although the hospital had a president as its nominal head, it was the treasurer who was the charity's most important official. In some

hands this position, in fact, became very powerful.

The best known treasurer was Benjamin Harrison, junior, who held the position for just over forty years from 1797, and who stretched the powers of the office to its limits. In the early nineteenth century the Charity Commissioners declared that he enjoyed 'absolute and uncontrolled authority . . . in every department of the charity.'¹⁶ Although rightly indicating how dominant the office could become in the hands of an autocrat, this was still an exaggeration in not emphasizing sufficiently the importance of the governing body and the influential court of committees. They lay behind the strongest, or most indifferent, treasurer. In 1742, when the hospital was negotiating to renew the lease of some tithes in Essex, the Revd Bailey expressed surprise about the influence of the governors:

I did not conceive that the Gentlemen of the Hospital took the Business of Renewing their Leases out of the hands of the Treasurer or that their Decrees were so absolute.¹⁷

To a large extent each organ of administration at the hospital acted as some kind of check upon the other. It was a system of balances and restraints established by the original will to prevent the abuse of office. And not only was the government of the hospital thus arranged but clear instructions were also given for its endowment.

Although the founder himself left mainly personalty, he instructed that his charity was to derive a regular income from landed estates; and one of the chief tasks of the court of committees was to buy, sell, exchange, and administer such property. It was certainly not unusual for an endowed institution to rely on income from land, and Guy again had the familiar example of St Thomas's to follow. After the South Sea shock it may also have seemed the safest thing to do at the time. It was not uncommon in the 1720s, after 'the

¹⁴ The only privilege they enjoyed was the right of each in turn to recommend a lunatic for admission to the hospital.

¹⁵ 11 Geo I c 12, Act of Incorporation [including the will of Thomas Guy] reprinted 1944, p 10.

¹⁶ 32nd Report of the Commissioners of Inquiry concerning the Charities in England, Part VI, 1840, p 712.

¹⁷ Bailey to J Harrison, 7 April 1779; Essex RO: D/DGh E3.

shipwreck of the year twenty',¹⁸ for many large owners to put their surplus capital into land or mortgages rather than stocks.¹⁹ In fact, Guy tied his hospital so closely to land that if any property were sold more had to be bought with the proceeds of the sale. The governors were also not allowed to hold stock as a permanent investment, and consequently during the following century they were not permitted to accept shares in lieu of payment for any land, for instance that bought by railway companies.

In 1725 an Act of Parliament incorporating the charity confirmed the terms of the will, and imposed further restrictions on the governors' powers for purchasing land. It forbade the buying of estates yielding as a whole more than £12,000 net. The reasons for this are obscure, but the so-called Mortmain Act of 1736 provides some explanation. To some extent this was the climax of a movement directed against the accumulation of property by institutions such as charities. The limit imposed on Guy's hospital may have been an indication of this growing opposition, and some witnesses in the later Mortmain enquiry thought that the allusions in the contemporary debates to a man who 'happens to fall into that delirious ambition of erecting a palace for beggars' specifically referred to Guy.²⁰

II

Whatever the reasons for such restrictions, the management of the hospital and its estates was now closely tied to a will and an Act of Parliament. Later parliamentary measures were also to affect the governors' policies; although most of this legislation, in the form of various charitable trusts Acts, was passed during the following century. The founder's

intentions, and Acts of Parliament, influenced the policies of Guy's hospital in a way few private properties could have experienced. The latter, of course, were often considerably affected by legislation and wills, but few could have had such direct and explicit initial guidance. The various Acts emphasized the hospital's position as a public body; and this difference was recognized by Thomas Turner, a nineteenth-century treasurer, when he wrote that with private owners the difference between nominal and net rents was immaterial, purely a matter of account, the whole details only being known to themselves:

But in the case of a public property it is very different. And the large proportions of outgoings to receipts, however capable of explanation, is apt to provoke animadversion from careless inspectors of the accounts and give unnecessary trouble to the managers.²¹

Such contrasts, however, can be exaggerated. In the management of Guy's property the similarities with private landowners were more striking than the differences. There were many rules of administration which were common to most large estates. Like many private landlords, the hospital had a central office where the accounts and records were kept. The degree of control such an office exercised on the estates, as well as its general efficiency, often depended on the energies and inclinations of the landowner himself. Where Guy's hospital was concerned, the organization was fairly tight. The agents were answerable to the treasurer who, in turn, was responsible to the governors either in the small court of committees or the general court of the hospital. It has been seen that these circumstances could still give him considerable power, but the carefully organized centralized system also prevented abuse of this office. Although it could not exert such a tight control over the agents scattered throughout various parts of the realm, especially those in distant Herefordshire, it did at least encourage the central officials to keep a watchful eye upon their activities. Careful checks were

¹⁸ E Gibbon, *Autobiography*, 1959 (World's Classics edition), p 12.

¹⁹ G E Mingay, *English Landed Society in the Eighteenth Century*, 1963, p 72.

²⁰ Mortmain Report, op cit, p 16. Gareth Jones, *History of the Law of Charity, 1532-1827*, 1969, p 109n.

²¹ Turner to Higgins, 21 Nov 1870, TLB 1870-72, p 216.

made in the central counting house on rents received from these stewards, as well as on the work they supervised on the various farms. From 1760, when the hospital had finished purchasing its main properties, an annual abstract of accounts was compiled, giving at a glance a complete statement of everything connected with the estates — their purchase values, rents, casual profits, and expenses — as well as an analysis of the charity's own expenditure in any particular year. Indeed, although this type of organization was similar to that used by many private landlords, it was the way in which it was used and controlled by committees that probably afforded the greatest difference between the management of the hospital's property and that of private estates.

The charity's accounting system also shared many features in common with the methods used by private owners. Although techniques varied in detail from one estate to another, an over-all pattern could be seen. The master and steward system, which had remained virtually unchanged from the Tudor period to the end of the eighteenth century, had become the standard form of accounting. As Pollard says: 'It had become routinized to the extent of being included in textbooks on land stewardship and, no doubt, taught in the appropriate schools.'²² The system not only provided a convenient view of the estate as a whole, but could also clearly show annual rent movements, accumulation of arrears, and the amount spent on salaries, repairs, buildings, and general upkeep of farms.

Another feature familiar to both the hospital's property and large private estates was the employment of a host of receivers, agents, clerks of works, and various semi-permanent officials such as surveyors and timber valuers. Private landlords saw the agents as their representatives in the fullest sense. The hospital did so too, and knew that its name could be damaged by intemperate habits and weak, ineffective behaviour. In

1763 the clerk had to send a warning to the newly-appointed Lincolnshire agent: 'I hear you spend more time in the Ale house which gives me concern.'²³ William Fortune, the Herefordshire agent, was eventually demoted because his disposition was 'so trifling and [his] neglects so frequent'²⁴ that the interests of the hospital were being damaged. The governors were not only landowners of an estate, they were also guardians of a charity. The treasurer explained to the disgraced William Fortune that where his susceptibilities were concerned, the governors had:

consulted in this new Regulation [to demote him], as far as wou'd consist with our faithfulness in the discharge of our Trust. . . .²⁵

As guardians of a hospital the governors were moved more by loyalty than personal interest. Their trusteeship put them one stage removed from the funds they controlled, and according to Avery such detachment could even be to the advantage of those officers who did not prove entirely satisfactory. He considered it gave the corporation a generosity of spirit not so readily found amongst private landowners; and he told Fortune that the governors had actually shown him:

a tenderness which they all declared they would not have shown you had it been their own private affair.²⁶

This idea of guardianship was another factor seen as an essential difference between the hospital and private estates. Yet the notion of trusteeship was not of course unknown amongst private owners. During the following century, for instance, the seventh Duke of Bedford maintained that he held his estate for the benefit of future heirs.²⁷ Again, recognition of the duty to provide charity on their estates and donate to worthy causes saw the hospital governors and many great private landlords adopting a similar policy. The charity's most frequent subscriptions were to churches and schools,

²³ Neale to Russell, 20 April 1763, TLB 1761-78, p 54.

²⁴ Avery to Fortune, 6 July 1745, TLB 1737-73, p 178.

²⁵ Avery to Fortune, 13 July 1756, *ibid*, p 337.

²⁶ Avery to Fortune, 18 Dec 1755, *ibid*, p 328.

²⁷ D Spring, *The English Landed Estate in the Nineteenth Century: Its Administration*, Baltimore, 1963, pp 51-2.

²² S Pollard, *The Genesis of Modern Management*, 1968, p 246.

although its most generous gestures came in the nineteenth century.

Therefore, in the general course of management, the hospital's estate policy was strikingly similar to that of any other type of landowner, private or institutional. Inevitably its property was also affected by the broad economic trends of the time. The charity shared in the general prosperity of the later eighteenth century, but only by looking more closely at its policy — the attitude to its farms, agents, maintenance, and improvement, leases, rents, and expenditure on the hospital itself — can the more distinctive character of its management be discerned.

III

The general efficiency of the governors was a point greatly in their favour, and although some of their criteria can be questioned, they certainly took much care over the purchase of their property at the beginning of the hospital's history. So deliberate were their negotiations that the Duke of Chandos, from whom the Herefordshire property was bought, despaired at times of ever completing the sale. He complained of:

how these Gentlemen have treated me, by keeping me in hand a year & an half & going down to view the Estate in so publick a manner, & afterwards raising Objections that I believe were never made before in the Purchase of any Estate.²⁸

The length of their deliberations arose in part from a determination to get as good a bargain as possible. On occasion the governors were prepared to pay twenty-five years' purchase for estates unencumbered by legal complications, the normal price, apparently, for land at the end of the 1720s and early 1730s. As Chandos himself wrote:

it is now grown so common a Price (and indeed with reason from the low Interest of Money) that to take less is little else than giving away the Difference.²⁹

However, the governors usually went for

lower prices, and were prepared for long negotiations and complex wrangles over title if they could get twenty-four years or below. For Lumley's Bardfield estate in north Essex, which had to be sold to settle heavy debts, the hospital paid twenty-three years' purchase. For Chandos's Herefordshire property they gave twenty-four years for a third of the land. The remainder was a large jointure estate which was to pass to the hospital on the death of the occupant, Lady Carnarvon. For this the charity paid only twelve years' purchase in the hope of an excellent bargain if Lady Carnarvon were to die, as the governors expected, soon after purchase.³⁰ The negotiations for the Sutton Marsh property in Lincolnshire were complicated by a Chancery dispute and the possibility of heavy maintenance costs, but fourteen years' purchase was still regarded as a satisfactory price.

In their pursuit of a bargain the governors seemed prepared to risk some long-term problems for immediate gains. Their careful survey of the Herefordshire estate had not only revealed the poor state of its buildings but, more significantly, the 'great deal' of land that was 'not worth 5s nay not half a crown p acre'.³¹ This clearly pointed to the number of clay farms in the northern half of the property, and, as it was to prove, such heavy land yielded the poorest rent returns. The Bardfield estate also had a high proportion of such land, while the problems and cost of defending Sutton Marsh from inundation were well known to the trustees during its purchase. That they were prepared to accept such disadvantages for the sake of immediate benefits must be considered a criticism of their management. Yet the estates also had a number of advantages which qualifies this judgement to some extent.

Both the Herefordshire and Essex lands were generously endowed with woodlands

²⁸ Chandos to Davies, 1 Jan 1730, *Chandos Letter Books*, p 101; Huntington Library, San Marino, Cal, Stowe MS ST20-ST57.

²⁹ Chandos to Halsey, 10 June 1729, *ibid*.

³⁰ Lady Carnarvon, however, survived another twenty-two years, and the hospital calculated a loss on the purchase, at compound interest, of £14,300. *Journal*, 1753-63, p 185.

³¹ Copy of Thomas Matthew's letter [undated] to the Duke of Chandos conveying . . . further observations on the Duke's letter received on 17 December, Misc Estates 1729.

which could bring valuable contingent profits. Good land was also to be found in extensive parts of the estates, such as the Beaumont property in north-east Essex for which the governors paid twenty-five years' purchase, and the ryelands of south Herefordshire. Similarly, there was some rich pastureland, which usually yielded more rent than arable, on the Lincolnshire estate. It was in these areas where the governors could expect immediate rent increases, and, indeed, there was some evidence of rents rising slowly in Essex during the period of purchase in the 1720s.³² The Beaumont property soon proved its worth in this respect. Up to 1742 its rents rose by 39 per cent, and on a few farms the increase was as much as 75 per cent. The fact that both the Herefordshire and Essex estates contained mainly enclosed land, and that there was a prospect of expansion by reclamation in Lincolnshire, were other attractions.

The governors evidently appreciated these merits as much as they might regret any weaknesses, for at no time during the eighteenth century, and for most of the nineteenth, did they ever consider selling their estates for some more favourably situated. But from the late eighteenth century they did become more interested in buying urban rather than agricultural property, and accordingly sold detached portions of their estates for this purpose. And, during the following century, many of the drainage problems affecting Sutton Marsh were also eased by the opening of the new Nene outfall in 1830.

Once the land was purchased, the hospital did not seek much direct contact with its farms, although the governors always showed interest in their estates, and would occasionally visit them to inspect their condition. Their reluctance to travel to Herefordshire was undoubtedly not the result of indifference but more the hazards of eighteenth-century roads. When such inspections did occur, the

advice and assistance of local landowners was often sought, and some of these, such as John Biddulph of Ledbury Park, became governors themselves. Visits from London to the nearer Essex and Lincolnshire³³ were far more frequent, especially as the banks, sluices, drains, and jetties of the latter were often in mind.

But such visits were still in the nature of special events. In the general day-to-day supervision of the estates, the trustees had to rely upon their agents. 'At this distance', wrote the clerk in 1765, '[I] can know nothing of their affairs or proceedings any further than as you give me information.'³⁴ The hospital's choice of agents was therefore central to its policy. 'A Person fit to be a Bailiff to a Nobleman or Gentleman would be very sufficiently qualified for the Service', Avery wrote to a local Herefordshire landowner, 'provided he were master enough of his Pen to relate Observations & Proceedings in Writing.'³⁵ One of the earliest Herefordshire agents, William Fortune, had previously been employed by the Duke of Kent.

Clear standing rules were also drawn up for the agents to follow, especially after the considerable trouble the hospital had with some local officers during its early years of landownership. William Fortune was eventually demoted, whilst among the Lincolnshire receivers Maurice Delamore became bankrupt and William Scribo was dismissed. Although the hospital still had occasional problems with later stewards, these early difficulties can be seen as teething troubles for the governors acting collectively as new landlords of an infant corporation. During the century the agents soon settled into dynasties. There were the Yeldhams, father and son, in Essex, and the Woodhouses, uncle and nephew, in Herefordshire. This tendency continued into the

³² K H Burley, *The Economic Development of Essex in the later seventeenth and early eighteenth centuries*, unpubl London PhD thesis, 1957, p 75.

³³ The south Lincolnshire estate lay near the Norfolk border, and was just over 100 miles from London compared with the 140 miles to Herefordshire. There was also the added convenience that the governors on view in Sutton Marsh could, and sometimes did, visit parts of Essex *en route*.

³⁴ Neale to Russell, 29 Jan 1765, TLB 1761-78, p 71.

³⁵ Avery to Westphaling, 29 July 1755, TLB 1737-73, p 310.

nineteenth century when the Armitages of Herefordshire were agents from 1809 to 1889, while similar successions were to be found in both Essex and Lincolnshire.

The various treasurers frequently sent advice to their agents, but there was always the danger of going too far. 'I don't charge you with carelessness or neglect in this or any other affair,' Avery reassured John Yeldham of Essex,

you are as diligent and faithful . . . as any Steward we have, or are likely to have in any Branch of our Estate; but you must bear with my telling you, that were you to write with less assurance that you can never be in the wrong, I shou'd not have at all the lower opinion of your Judgement or fidelity. . . .³⁶

Constant interference, though, could be self-defeating. The treasurers realized that agents needed some freedom of action to protect or build their own status. Some, such as the Woodhouses, were smaller landed off-shoots of well-established families. The treasurers asked for the agents' opinions more than they gave them advice, and they discouraged tenants writing to the hospital direct. The clerk, John Harrison, explained to one applicant for a lease that as the agent had never mentioned his name he could not be recommended.³⁷

There were other areas in its estate administration where the hospital's influence was more direct. The court of committees, for instance, was closely involved in promoting building and repair work, and vouchers for the latter were constantly being demanded. Enclosure of land and consolidation of farms also came under the more direct control of the governors. Although the hospital bought estates which had already been enclosed by private agreement, much of this land was still intermixed with that of others. Consolidation, involving the buying, selling, and exchanging of small pieces of land, continued annually throughout the century, while the only extensive enclosures undertaken con-

sisted of land reclamation on the south Lincolnshire property.

The landowner's influence was also apparent in farm leases, most of which were for a number of years during this period, although the tenants still had a considerable degree of independence in the management of their farms. That the estates were, for the hospital, primarily sources of income was reflected to some extent in their leases. The governors appeared more interested in preventing damage and waste than promoting agricultural improvement. The many preventative clauses included ones forbidding farmers to grow certain crops, such as hops, without permission, preventing tenants from lopping or shredding timber trees, and not allowing them to assign their leases without permission. But there were also many maintenance clauses instructing the tenants to carry out repairs, scour ditches, maintain hedges, and in Herefordshire graft fruit trees and fill the gaps in orchards.

The number of husbandry covenants increased during the eighteenth century. At the beginning of the period they tended to be very general, and were usually of the type exhorting the tenant to conduct his farm in a husbandlike manner. This sort of language certainly continued into the second half of the century, but more detail had also crept in by that time, especially concerning the last few years of a tenancy. In the Herefordshire lease for Wearend farm in 1779, for example, no more than 47 acres of arable could be sown with wheat in the final year, 'and that only on a summer fallow'. During the last three years 47 waggon loads of 'good well-burnt lime' had to be ploughed into the arable, while on expiration of the lease the tenant was also required to leave 47 acres of clover and ryegrass of the first year's growth, and the same amount of the second year's growth.³⁸

It is difficult to know how far these covenants were implemented. That the

³⁶ Avery to Yeldham, 2 Sept 1756, *ibid.*, p 341.

³⁷ Harrison to Russell, 2 Oct 1773, TLB 1761-78, p 255.

³⁸ Hereford RO: C99/III/117; Guy's Hospital Coll.

hospital thought it worthwhile to introduce increasingly detailed covenants does suggest that, in general, the terms were carried out. There seems little point including such detailed clauses if there had only been small hope of implementation. The covenants also reflected the charity's tendency to follow trends rather than initiate new practices. A group of Essex leases showed the hospital following the well-established practice of forbidding the tenants to plough the arable for more than two successive years.³⁹ In a number of instances the governors accepted customs of which they actually disapproved. On some Herefordshire farms the ploughing of land for three or even four consecutive years was allowed because it was local practice; and although the governors on view in Herefordshire in 1781 thought the use of cots to house sheep ill-advised, the clerk still wrote to the agent that as 'it is a custom so generally practised in your County it could not be broke thro'.⁴⁰

The hospital was by no means unusual amongst landowners in thus acknowledging custom and following well-tried methods. Yet there is no evidence that its leases unnecessarily tied the hands of improving tenants. During the century many of its farms did adopt practices associated with improvement. A lease of 1775 showed that the four-course Norfolk rotation was in use on its few south Essex farms. By the 1750s the use of clover, both on fallows to form temporary leys and as a crop to sow with corn, had become a common feature on farms in both Herefordshire and Essex; while at the turn of the century the hospital's Herefordshire agent was promoting the use of swedes as a suitable field crop on heavy land. But such advances were gradual and piecemeal. The hospital had little direct influence on the adoption of new farming methods. It used leases to protect its property and to ensure an outgoing tenant left his land in good heart. Its covenants

contained none of the detailed positive instructions found in some of Coke's later leases.⁴¹ In the management of its lands the hospital preferred to follow the rule than encourage the exception.

The officers, however, were certainly keen to implement its covenants, and were known to take action when they were broken. In 1769 the clerk wrote to a tenant:

You have broke your Covenant in the Lease by Letting the Land to another man without Licence from the Hospital & have forfeited your Lease by so doing. . . .⁴²

The following year he wrote to the Lincolnshire agent of the need to see that covenants were kept, while in 1786 he thought the tenants 'Roberts & Peele ought to be prosecuted as examples for breach of Covenants'. He would have liked the hospital to be rid of them, with all their rents paid, without litigation, but added that 'if they continue in their farms I think their bad conduct shou'd not be passed over in silence'.⁴³

But if the discussion of leases frequently recurred in the correspondence of the hospital's treasurers and clerks, the collection of rents dominated it. This was the primary concern of the governors as landlords, although there were a few other sources of revenue available. Woods were kept permanently in hand because timber sales brought valuable casual profits. Manorial dues were sometimes pursued with interest, but usually yielded very little, while tithes were another form of revenue from land when the governors were the lay proprietors. It was, however, rents from farms which constituted the main source of the charity's income.

The third treasurer, Benjamin Avery, denied that the hospital ever raised its rents unreasonably; and the increases in its gross rents during the second half of the century, after the charity had finished purchasing its main agricultural estates, certainly appeared

³⁹ Essex RO: D/DGh, E15/3.

⁴⁰ Harrison to Keyse, 20 June 1781, TLB 1778-1807, p 52.

⁴¹ J D Chambers and G E Mingay, *The Agricultural Revolution, 1750-1880*, 1966, p 47. R A C Parker, *Coke of Norfolk*, 1975, esp pp 138-45.

⁴² Harrison to Gould, 16 Oct 1769, TLB 1761-78, p 158.

⁴³ Harrison to Russell, 9 Dec 1786, TLB 1778-1807, p 155.

moderate in comparison with those of some other landowners. From 1760 to 1793 the hospital's gross agricultural rents rose by 28 per cent. In Herefordshire and Essex they increased by over 30 per cent, but the Lincolnshire estate lagged behind with a rise of only 18.5 per cent.⁴⁴ In comparison, from 1750 to 1790 the Duke of Kingston gathered an extra 48 per cent, while Lord Monson's rents increased by 44.5 per cent.⁴⁵ However, the Duke of Ancaster's Lincolnshire lands, like those of the hospital in the same county, experienced a modest rise from the late 1750s of between 22 per cent and 29 per cent although the increase on his Essex estate at Colchester was a more impressive 45 per cent.⁴⁶

Throughout its history the hospital never experienced the considerable rent increases enjoyed by some estates. During the French wars the difference was even more marked than previously. While the hospital's gross agricultural rents rose by 54 per cent, some other properties, such as those of the Duke of Kingston and the Kent estates of Aylesford and Radnor, recorded rises of well over 100 per cent.⁴⁷ But this does not mean that the governors were necessarily more sympathetic to their tenants in this respect than other landowners. They were just as anxious to get as much rent as they could. In 1738 the second treasurer had bluntly declared, 'the Hospitall is not for buying anything but what will produce Profit'.⁴⁸ Among the reasons for

the generally modest increase in the charity's rents was the important one that both the Herefordshire and Essex holdings contained a considerable amount of clay land — one of the most difficult, expensive, and unrewarding soils to work. Yet even in comparison with some other Herefordshire estates, the hospital's performance was uninspiring. While its gross rents for that county rose by 58 per cent during the wars, those on Cornewall's 6500-acre property at Moccas went up by as much as 119 per cent.⁴⁹ Contemporary rental records of the 5000-acre Foley estate at Stoke Edith run from 1771 to the early years of the war only; but to 1799 it too showed a larger increase than that on the charity's estate, though only by 46 per cent compared with the hospital's 35 per cent.⁵⁰ In Lincolnshire, though, the performance was far better than before the wars. The rise in rent kept up well with some of the neighbouring estates, with the hospital's 74 per cent increase comparing favourably with the 80 per cent rise on Lord Monson's much larger property.⁵¹

However, if the charity's rent increases were moderate, the demand for payment of arrears was more extreme. The treasurer was at his most acrimonious when dealing with this subject. One of the complaints about William Fortune was his neglect to collect, or at least explain, the large arrears of rent in Herefordshire. In 1745 Avery demanded the agent should 'multiply distresses' for the non-payment of rent, although they might 'make a noise in a Country'.⁵² In 1753 he found an Essex tenant's three years of arrears 'frighten-

⁴⁴ During the late eighteenth century the Sutton Marsh rent did not fulfil the promise of the 'very rich strong soil' which had attracted the governors on purchase. (Report of the Sub-committee . . . to view Sutton Marsh, p 10, SC 1725.) However, Grigg points out the drainage problems and backwardness of farming in south Lincolnshire at this time. He says: ' . . . the majority of farmers carried on traditional ways and general productivity did not rise': D Grigg, *The Agricultural Revolution in South Lincolnshire*, 1966, p 191. The hospital's modest rent increases undoubtedly reflected this situation to some extent.

⁴⁵ G E Mingay, *Landownership and Agrarian Trends in the Eighteenth Century*, unpubl Nottingham PhD thesis, 1958, p 78.

⁴⁶ *Ibid*, p 486.

⁴⁷ *Ibid*, p 492.

⁴⁸ Hollister to Fortune, 11 April 1738, TLB 1737-73, p 13.

⁴⁹ Hereford RO: J56/III/1-20, Rent Account, Moccas estate. The increase from 1814 to 1815 was as much as 50.5 per cent, but the 1814 rent was exceptional in a series which had been steadily increasing to the 1815 figure of £8287 for most of the year.

⁵⁰ Hereford RO: F/H3/Rentals 1771-1803, Foley MS. This series is incomplete. There was also a 37 per cent rise from 1799 to 1801 (the amount of rent for 1800 is missing); but this is quite unusual in a run of generally modest annual changes before this date, and was probably the result of a revaluation.

⁵¹ Mingay, thesis, op cit, p 492.

⁵² Avery to Fortune, 17 Jan 1745, TLB 1737-73, p 170.

ing⁵³ while in October 1759 he adopted his most sanctimonious tone when he thought the 'poor pittance' from Herefordshire a meagre reward for the repairs and new buildings the hospital had undertaken, and hoped 'for a better share of their produce to help answer the weekly disbursements of this House of Charity . . .'.⁵⁴

The Herefordshire property was to claim the largest share in the hospital's expenditure on estates for that year, and the charity actually overspent by £476 on its general account. In fact, in proportion to its gross income, the amounts spent on the estates in the late 1750s and early 1760s were the highest for the century. In 1758 it was 49 per cent, and in the following year 55 per cent. In 1760 the governors spent over £5200 on their property, representing 44 per cent of their income. The reason for such high expenditure during these years is partly explained by the heavy building and repair work done on the recently acquired jointure estate in Herefordshire, as well as some new jetties which were installed on the Lincolnshire coast. The cost of maintenance in Lincolnshire actually made this the most expensive estate to run during the eighteenth century, as the outgoings rarely fell below 40 per cent of the rent. In 1762 and 1775 the cost of a new embankment and heavy repair work pushed up the total outgoings to 41 per cent and 42 per cent respectively of the hospital's whole gross income for those years. But on average, from 1748 when the Lincolnshire property was bought to 1800 the expenditure on all the hospital's estates was a third of the corporation's gross income. This was the margin between gross and net rents before any expenditure on the hospital itself was made.

Although they spent as much as a third of their gross income on the agricultural property,⁵⁵ the governors could still not be

regarded as notable improving landlords. It is difficult to separate the amount spent on permanent improvements from running costs, but on the item 'building and repairs' the hospital spent from 1762 to 1815 an average of 9.5 per cent of its gross income from all its estates.⁵⁶ This is 2 per cent below the average for this period given by Holderness on the 'less renowned estates' of East Anglia,⁵⁷ although it does compare favourably with the amount spent on property outside this area. On his Nottinghamshire estate, the Duke of Kingston, for instance, devoted only 1 to 5 per cent of his gross income on this item during most of the eighteenth century.⁵⁸ It is also true that the hospital's buildings in Herefordshire were praised by both reporters to the Board of Agriculture, while in the early 1760s the trustees also constructed a new embankment in Lincolnshire for £1275, and later enclosed over 200 acres of salt marshes at a cost of almost £1000 in 1768-69. A few years afterwards a further £850 was approved to strengthen the weaker parts of the coastline. This Lincolnshire policy, however, was as much survival as improvement, and from 1762 to 1815 the hospital had to spend as much on its coastal defences as on buildings and repairs. The governors also refused to embank another 348 acres of salt marsh in 1777, estimated at £4864, because it was considered too expensive, while in 1771 they admitted blame for carrying out 'no material repairs . . . for several years'⁵⁹ to the part of the Lutton Leam outfall which cut through its land. Indeed, when William Skelton was appointed assistant agent in 1803 he wrote that 'the drainage was in a wretched state', and added that there was hardly any fencing

⁵³ Avery to Bevan, 24 Feb 1753, *ibid*, p 284.

⁵⁴ Avery to Woodhouse, 30 Oct 1759, *ibid*, p 385.

⁵⁵ This expenditure included taxes, rates, repairs and buildings, surveys and maps, maintenance of sea banks and fences, and the expenses of administration, such as agents' salaries.

⁵⁶ The category 'buildings and repairs' is first recorded in the central abstracts in 1762. During the period, more was spent on this item in Herefordshire and Essex than in Lincolnshire.

⁵⁷ B A Holderness, 'Landlord's Capital Formation in East Anglia', 1750-1870, *Econ Hist Rev*, 2nd ser, XXV, 3, 1972, p 440.

⁵⁸ Mingay, *English Landed Society*, *op cit*, p 178; Holderness, *ibid*, p 442.

⁵⁹ 25 June 1771, *Court of Committees Minute Book*, 1756-76, p 192.

and 'only about six convenient Farm-houses . . . but scarcely any other Buildings'.⁶⁰

On the whole, the governors were more maintainers than improvers of their estates during this period. The hospital always had prior claim on the funds. In the second half of the eighteenth century, from 1748, an average of 61 per cent of total revenue was spent on it, while a mere 5.7 per cent provided the average balance. During these years expenditure on the hospital only once fell below 50 per cent, while in the 1790s it usually hovered around 70 per cent. In 1795 it claimed as much as 81 per cent of the total revenue, but that year the charity as a whole spent 15 per cent beyond its income. This was a period when considerable improvements were being made to the main building itself. When John Howard visited Guy's in 1788 he noted that 'the alterations in this hospital are to go on', and although it was situated

in a very close part of the town, and surrounded with buildings, they are highly commendable, that the patients may enjoy the advantages of a free circulation of air.⁶¹

In the fifteen years from 1800 the improvements continued apace, and claimed on average as much as 88 per cent of the charity's gross income from rents. As this expansion coincided with some disastrously expensive storm damage in Lincolnshire the governors would have spent beyond their income every year but for some substantial timber sales which reduced the number of deficit years to seven.

This policy of hospital development, accelerating from the late eighteenth century, coincided with the acquisition of more land surrounding the charity in Southwark. The trustees had been interested in buying such property from the beginning of the hospital's history, and small pieces were periodically

acquired throughout the century. In 1789 the governors bought the more substantial Snowsfield estate for £4200. This can be seen as the start of a more determined policy to acquire neighbouring property, one which culminated in 1861 with the purchase of the Holcombe estate for £27,000. With the governors controlling as much as possible of the area they could, for instance, convert houses into accommodation for hospital staff, rid the neighbourhood of noisome public houses, or prevent the nearby buildings affecting the light in the wards. The policy also ensured the physical expansion of the hospital itself, and during the eighteenth century impressive developments occurred. The charity's first lecture theatre was built in 1770, the west wing completed ten years later, while the 1780s saw not only the construction of a millhouse and mill for grinding drugs but also the important alterations to the wards observed by John Howard. Payment for such improvements and acquisitions was made either out of the proceeds of large timber sales or by selling detached portions of the agricultural holdings. The estates were always made to serve the charity — a policy which constantly influenced the governors in the management of their property.

IV

In their correspondence a number of the treasurers were clearly conscious of a difference between institutional and private landowners. Avery wrote to the Herefordshire agent that the corporations in London suspected that:

their rents in these remote Counties are neither paid so expeditiously or the repairs done on so reasonable Terms as the Gentlemen who reside near their Estates [who] have the one paid and the other performed.⁶²

His predecessor had complained that the hospital had been unfairly treated in a particular transaction with a certain Roberts because 'He tells you wee don't lay out our

⁶⁰ W Skelton, *A Report on the condition and management of the several Farms in the County of Lincoln, the property . . . of Guy's Hospital*, 1853, p 27; Lincs Bundle 284.

⁶¹ J Howard, *An Account of the Principal Lazarettos in Europe . . . together with . . . Additional Remarks on the Present State of those [prisons and hospitals] in Great Britain and Ireland*, 1791, pp 135–6.

⁶² Avery to Keyse, 9 Jan 1758, TLB 1737–73, p 374.

own money & may afford good Rates'.⁶³ It has been seen that this difference between public and private landlords can be exaggerated. The similarities were often more striking, and at times it seems as if the treasurers were trying to make a distinction when one hardly existed.

They were also anxious to appear amongst fellow landlords in as favourable a light as possible. Hollister wrote that

the Hospitall should be Esteem'd to be good Landlords, & yett, I would not Indulge the Tenants in any thing, which should make them think us weak Landlords instead of Good Ones.⁶⁴

There were certainly gestures of goodwill, and some distressed tenants were helped with their arrears. Donations were given to worthy causes. Tenant improvements, such as the drainage of Thaxted Lodge in Essex during the 1730s, were sometimes encouraged and financially assisted. Yet the governors were never sweeping in their generosity either to the tenants or parishioners. Acts of kindness were tempered by expediency; and it was the fact of the corporation which so qualified their benevolence. In discussing distressed tenants in the 1780s, the clerk wrote to one of them,

it is not to be expected that the Gov^{rs} of the Hospital as Trustees of a Charity can grant them such relief as you or they may wish or expect.⁶⁵

Forty years earlier Hollister had summed up the accepted position:

... tho' I am truly unwilling to ruin a Family, I must & will do All I can to prevent Loss to the Hospitall...⁶⁶

The remoteness of the hospital seemed to underline an attitude to the tenantry and provision of charity which was correct but also a little cold. Although the governors expressed interest in their property, the indefinable and personal bond which often existed between the private landlord and his estate could not so easily be achieved by an

institution. Even though the scattered nature of many estates meant that some degree of absenteeism was unavoidable, the owner's physical presence in his permanent home helped to create such a bond with his tenants. A distant corporation could have no such rapport. The governors had no local political interests to pursue for the hospital, they took no part in social activities, and they had no home farm from which they could promote agricultural improvements. It was essentially government by committee. When a particularly important matter arose, such as the buying of an estate or enquiry into the conduct of an agent, a sub-committee was usually formed; and this was required to report its findings to the court of committees. Much consideration was given to the problems of management. Standing rules were carefully drawn up, and some treasurers sent a battery of instructions to the local agents. The regard for their trust made the governors generally unadventurous in their policies. They did not particularly discourage agricultural improvement, but often preferred to accept established custom as the safer course to take. Indeed, on their furthest estate they appeared so remote during this period that too heavy a responsibility fell upon the local stewards. From 1780, and especially during the war years, the younger James Woodhouse became so independent that he boldly ignored the rules for purchasing pieces of land, was able to filch from timber sales, and also bought land for himself from the governors at below the market price. He became more landlord than representative; but at least he did provide a personal touch, albeit an unsavoury one, which a distant committee found impossible to give.

Yet in the general management of its estates to 1815 Guy's hospital does not emerge as a particularly inefficient, harsh or demanding landlord. The governors showed a constant anxiety to avoid waste and neglect on their farms, and do not appear as heartless rackrenters. Like other landowners they pursued rent increases to yield more income,

⁶³ Hollister to Fortune, 4 [?] 1739, *ibid*, p 112.

⁶⁴ Hollister to Fortune, 9 Sept 1738, *ibid*, p 26.

⁶⁵ Harrison to Harvey, 12 Jan 1781, TLB 1778-1807, p 42.

⁶⁶ Hollister to Yeldham, 12 July 1740, TLB 1737-73, p 71.

but during this period they were generally less forward in raising their rents. It is true that from another point of view this policy can be criticized. The hospital relied on rents for its survival, and as the modest increases also reflected to some extent the type of land the corporation owned the governors can be condemned as much for their initial choice of property as praised for any generous spirit they might display. On the other hand, their management did not lead to neglect of the charity itself. At certain times there were indeed some unfavourable reports of conditions inside the wards,⁶⁷ and there was no increase in the number of resident patients during this period, but some major improvements to the institution were made in every decade. On the whole, the administrators

demonstrated their clear aim to protect the hospital's interests, and yet, in doing so, did not abuse their agricultural holdings. The estates carried no social prestige for them, and unlike a number of private landlords there was no desire for aggrandisement. It was 'not the wish of the Gov^{ts} to purchase for the sake of encreasing their property'.⁶⁸ Their stately home was the hospital; but the only similarity it had with the nobleman's country house was that it 'was the hub of the landlord's existence'.⁶⁹ Its purpose was to serve the poor, not to reflect ostentation and grandeur. It was a constant trust, and the estates were bought solely for the purpose of its maintenance.

⁶⁷ G Williams, *The Age of Agony*, 1975, pp 100-1.

⁶⁸ Harrison to Woodhouse, 21 June 1781, TLB 1778-1807, p 53.

⁶⁹ Mingay, *English Landed Society*, op cit, p 209.

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Co-operative Corn Milling: Self-help During the Grain Crises of the Napoleonic Wars¹

By JENNIFER TANN

CROP failure was a fact of life in the eighteenth century. Grain crops could be adversely affected not only at harvest time but at sowing and growing seasons too.² But whereas earlier in the century years of dearth — 1709, 1740, 1757, 1765, 1767, and 1768 for example — were followed by adequate harvests, runs of bad harvests occurred in the 1790s and early 1800s, and there was no reserve of home-produced grain to which to resort. From the outbreak of the French wars it was not only a question of high grain prices but also of the actual availability of grain.³ In 1793 it was observed that 'the crop of wheat is more deficient than it has been within the past twenty years, or perhaps in the memory of man'. By 1794 it was pronounced that 'there seldom had been a smaller stock of wheat in the country than when it was succeeded by a scanty crop in 1795 . . . necessity required the immediate use of it and consequently less was left for the supply of 1796. The crop of 1799 . . . was greatly more deficient than that of 1795 and it was the same throughout the North of Europe.'⁴

The relatively inelastic demand for bread grains on the one hand, and the annual variations in the amounts reaching the market, produced great price fluctuations. Between 1750 and 1790 there had been a gradual rise in the price of wheat, but from

1793 there was a sharp increase associated with violent fluctuations. In 1790 the price of wheat was about 48s — 53s per Winchester quarter but this rose in 1794 to between 58s and 63s, and in 1795 from 81s to nearly 100s, an unprecedented level. The price dropped in the next three years, but in 1800 it rose to over 148s in some markets, the average being 113s 10d.⁵ Whereas there was some degree of consumer protection from the baker in the assize of bread, although this was not operative everywhere,⁶ the miller's toll was not effectively regulated until 1796,⁷ and by this date most millers were acting to a large extent as principals, buying their own grain and selling the flour, and their profits were not controlled. Moreover, it was argued, 'the conversion of many corn mills into cotton mills and for other purposes of manufacture, has enabled the millers in many parts of England to establish a monopoly in the most important article of life. How they have used the advantages which they have derived from the number of corn mills being diminished and how the poor have suffered by it, is too well known.'⁸ Mills were, therefore, a reasonable and frequent target for food rioters.⁹

⁵ Chambers and Mingay, *op cit*, pp 110–11.

⁶ In Birmingham, for instance.

⁷ *Act for Better Regulation of Mills*, 36 Geo III c 85, 1796.

⁸ G J Holyoake, *Self Help a Hundred Years Ago*, 1891, p 69, quoting The Society for Bettering the Conditions and Improving the Comforts of the Poor. It was added that 'The Injury to the poor . . . is nearly equal to two-thirds of all the poor's rates collected in England, and considerably exceeds a million a year.' The decline in the number of water corn mills, if such it was, was almost certainly more than made up by an increase in the number of windmills for corn grinding.

⁹ E P Thompson, 'The Moral Economy of the English Crowd in the Eighteenth Century', *Past and Present*, L, 1971; J A Langford, *A Century of Birmingham Life*, II, Birmingham, 1868, pp 104–5.

¹ Versions of this paper were read to a meeting of midlands economic historians and to Professor A H John's seminar. I am grateful to participants at both of these for their constructive criticisms. I am also indebted to Dr S Fairlie for her comments.

² J D Chambers and G E Mingay, *The Agricultural Revolution*, 1966, pp 108–9.

³ W M Stern, 'The Bread Crises in Britain, 1795–96', *Economica*, XXXI, 1964.

⁴ PRO: 30/8/291, Observations on the Corn Laws by Gov Pownall, pp 17, 18, 20.

I

Relief measures were introduced at both national and local level; some were effected by government, some were demonstrations of good intent by a public-spirited minority, while others were expressions of self-help. Wheat imports were encouraged by the government, despite the French wars, by the operation of a bounty scheme; obstruction of the internal grain trade was prohibited, and restrictions were placed on the industrial uses of grain.¹⁰ Pledges to desist from the use of hair powder and to consume only wholemeal bread were signed, while public subscription lists were opened by philanthropists to ease hardship in certain areas. Funds were employed either to purchase grain in bulk or to purchase substitutes, which ranged from other grains, particularly barley and rice, to potatoes and even fish and meat.¹¹

In some instances arrangements were made with local millers and bakers to process the grain for a fixed tariff, thereby cutting out the corn factor's profit.¹² These local measures were generally recognized to be temporary expedients 'until the Return of Harvest shall render further Exertions unnecessary',¹³ but there are several examples of more permanent arrangements. In these cases several of the more affluent inhabitants rented, purchased or erected a wind or water mill, sometimes acting as principals in purchasing grain, at other times grinding grain brought to the mill for a fixed charge. One such public subscription mill was purchased or rented at

Kimbolton, Beds, in 1800 by a local Society for Bettering the Condition of the Poor which subscribed £400 for the venture.¹⁴ A group of eight people each subscribed £40 towards building a wind mill at Barham, Kent, in 1796,¹⁵ and a subscription water mill, costing £800, was built in Snettisham, Norfolk, before the end of the Napoleonic wars.¹⁶ Like the Barham mill this was built for the poor of the district, and the venture was probably financed in much the same way. Other similar schemes were launched in the east midlands and elsewhere between 1792 and 1815 but subscription mills seem to have been short-lived on the whole.

II

At a local level self-help made the greatest contribution towards alleviating distress, many of the schemes being organized by friendly societies in areas where there was a significant labour aristocracy element in the working population: in naval shipyards, sea ports, the east midlands hosiery and lace region, the environs of Sheffield, Birmingham, and the Black Country. As the Masons' Society of Sheffield remarked, 'it is far from our intention to speak disrespectfully of the benevolent exertions of our eminent townsmen but we mean . . . to establish a perpetual and effectual plan to prevent, on every future exigency, the impositions of the different retailers in the useful articles of life.'¹⁷ Flour clubs, co-operative retailing schemes in effect, were established by a number of midland friendly societies. Farey

¹⁰ Stern, op cit, pp 176-86.

¹¹ *Society for Bettering the Conditions and Improving the Comforts of the Poor*, III, 1800, pp 66-84; *ibid*, 1802, pp 43-50. In the summer of 1800 Nottingham Corporation opened a subscription to provide the poor with bread. A number of 'wealthy and humane' inhabitants of the town contributed, and when it was found that there was neither wind nor water to grind the grain Davison and Hawksley ground it at their steam-powered worsted mill. Apart from receiving, as a nineteenth-century antiquarian put it, 'a tribute from thousands of hearts overflowing with the most grateful sensations' Hawksley was given the freedom of the town: *The Nottingham Date Book*, p 232.

¹² *Society for Bettering the Conditions and Increasing the Comforts of the Poor*, I, 1798, pp 267-72; *ibid*, III, 1802, pp 140-6.

¹³ Langford, op cit, p 58.

¹⁴ *Society for Bettering the Conditions and Increasing the Comforts of the Poor*, III, 1800, p 72.

¹⁵ Holyoake, op cit, pp 66-9. Shortly afterwards a parish mill was built in Chislehurst, Kent, with the subscriptions of ten individuals: *ibid*, pp 70-1.

¹⁶ R. A. Pelham, 'Public Subscription Corn Mills', *Milling*, 1 Nov 1958, p 474, quoting *General View of the Agriculture of Norfolk*. There was some disapproval of these schemes: see F. M. Eden, *The State of the Poor*, 1797, p 519, who suspected that they would end in monopoly.

¹⁷ *The Iris*, 7 Aug 1795. All newspaper references to the activities of the Sheffield friendly societies are quoted from a MS history of The Club Corn Mill in Sheffield Reference Library by kind permission of the author, Mr W. E. Spencer.

noted that 'During the Scarcities of 1795 and 1800 many Associations of Working Men were formed in the southern parts of this County (Derbyshire) and elsewhere, who subscribed to purchase Wheat, and get it ground, selling out the Flour at prime cost, to their Members: these Societies were several of them found so beneficial, that some of them seemed likely to become permanent.'¹⁸ Stocking-knitters at Long Eaton, Notts, founded a flour club,¹⁹ and the Sheffield masons, believing that 'sick societies have the power of effecting something very advantageous towards easing the present almost intolerable burthen', combined with fifteen other local friendly societies 'to procure grain or flour of the best quality and at the lowest prices'.²⁰ Every member received 'for himself one stone of flour per week at prime cost and those who have families half a stone a head for the rest of their family'. In 1795 a friendly society at Rothley, Leics, employed £50 from its funds to purchase corn, have it ground, and sell the flour at cost to members, and similar clubs were founded in Quorndon, Sileby, Mountsorrell, and several other places in Leicestershire.²¹

The saving made by flour club members was usually of the order of 4d — 6d per stone over the retail price of flour; moreover, the establishment of flour clubs frequently led to a general lowering of flour prices as local millers reacted to the competition.²²

In order to reduce the price of flour to their members still further some friendly societies began to rent or build mills, becoming co-operative producers.²³ The earliest known co-operative corn mill was the windmill built

sometime before 1760, probably in the crisis of 1757, by the shipwrights employed in Woolwich dockyard. It was burnt down in 1760, the local bakers being suspected of arson, but was rebuilt in the same year on a larger scale.²⁴ This isolated attempt at co-operative production seems to have been successful, but it was not until the late 1770s that the example of the Woolwich shipwrights was followed by other friendly societies. In 1778, when the prices of provisions were high at the close of the American wars, several friendly societies in Mansfield, Notts, contributed to build a post windmill 'for the benefit of families that belong to the members of the different clubs'. About 1500 people were supplied with best bread flour at 1s 4d per stone and best fine flour at 1s 6d, saving between 3d and 5d per stone.²⁵

In 1782 sixteen sick clubs in Nottingham decided to build or purchase a windmill to be run on the lines of the one at Mansfield,²⁶ and 'Club Mill Terrace' in Chesterfield probably refers to a similar venture in that town.²⁷ A cotton mill workers' friendly society, founded in 1770 at Hucknall Torkard, Notts, jointly led by a local stocking-knitter and an innkeeper, purchased a post windmill for £350 to grind corn during the 1795 crisis.²⁸ And it was probably this crisis which led to the establishment of two friendly society mills in the south of England. By 1797 an Association of Artificers at HM Dockyard,

general use until the 1820s, it was applied to activities similar to those first practised in the late eighteenth century, and described in the present paper. It is not unusual for a descriptive term to post-date by some years the activity to which it applies.

¹⁸ J Farey, *General View of the Agriculture of Derbyshire*, III, 1811, p 578.

¹⁹ They sent grain to Batch Mill at Toton, Notts, paying the miller 3s per quarter and saving 4d to 6d per stone. *Ibid.*, p 578.

²⁰ *The Iris*, 21 Aug 1795.

²¹ *Society for Bettering the Conditions and Increasing the Comforts of the Poor*, II, 1800, pp 60–7.

²² *Ibid.*, p 61; *ibid.*, pp 140–1.

²³ Co-operative corn mills, as distinct from subscription corn mills, were established and run by the consumers. Although the term 'co-operation' did not come into

²⁴ This antedated by more than thirty years the mill thought by Holyoake to have been the first to be erected in the interests of the consumer: Holyoake, *op cit*, p 66; W T Vincent, *Records of the Woolwich District*, c 189–, pp 47–8.

²⁵ *St. James Chronicle*, 5 Jan 1779.

²⁶ *Nottingham Journal*, 16 Nov 1782. I am indebted to Dr S D Chapman for this reference.

²⁷ Information kindly supplied by Borough Librarian, Chesterfield.

²⁸ J H Beardsmore, *History of Hucknall Torkard*, Nottingham, 1909, pp 149–50. I am indebted to Dr S D Chapman for this reference.

Portsmouth, had built a windmill in Portsea, valued at £1300,²⁹ and by the following year the Unity and Amity Society of Brixham Quay, Devon, had built a windmill for approximately £300.³⁰ The friendly societies of Sheffield, led by the Masons, although acting as co-operative wholesalers and retailers at first, aimed from the outset to build their own mill, and eventually forty-three societies subscribed to the Club Flour Mill.³¹ This was the most ambitious of all the friendly society flour milling schemes. Not only were many more clubs involved than in other co-operative corn mills, but the Club Flour Mill was much larger and more costly than other mills. In 1795 a site was taken on a twenty-one-year lease, and a mill containing two water wheels and eight pairs of stones was built. This was the equivalent of half the effective capacity of Albion Mill at Blackfriars, and its capacity was probably greater than that of any other late eighteenth-century steam flour mill.³² There is little evidence of eminent townfolk or manufacturers taking an interest in the corn milling ventures of local friendly societies. But Davison and Hawksley of Arnold, Notts, were an exception. Some time before 1798, probably in 1795, they gave their employees the lease of some land near their textile factory on which to build a flour mill, probably a windmill.³³

A number of the friendly societies' co-operative mills were successful, due mainly to the fact that the enterprises were small. The clubs had few assets,³⁴ they built cheap timber windmills that could be easily repaired by their own members, and they ground only modest amounts of corn. In this way, without the financial means, management experience or indeed the need to expand, they performed a valuable service to the members in grinding cheaply the small amounts of members' own grain that large, highly-capitalized concerns would have found uneconomic to handle, besides acting as principals and selling at cost.

Others were less successful. The Sheffield mill had failed by 1816, and the Nottingham societies did not survive long enough to build a mill. Management posed new and difficult problems for all early consumer-orientated co-operative producers, for, as a Sheffield observer commented: 'the combined selfishness of five hundred individuals was by the mere magic of words to be transformed into the purest personal disinterestedness.'³⁵ Having no right to recover funds and sue for debt, the Sheffield members were 'constantly losing more at the hopper than they saved in the bag'. It is unlikely that any members of the managing committee had experience in grain buying or milling, and where a mill was operated by as many as forty-three friendly societies, as at Sheffield, these were likely to be problems of vested interests. Their naïvety is well illustrated by the fact that the Club mill was built on leasehold land held only for a term of twenty-one years. It was almost inevitable that the mill would be 'ultimately clutched by a party who found all the considerations of a charitable object too feeble to withstand the temptation to accept as

²⁹ Guildhall Library, London, Sun Insurance Register 11937/22/672962. The valuation was: mill £500, machinery £800, stock and utensils £500, two tenements in tenure of miller and baker £100, bakehouse £200, stock and utensils £100, stable and carthouse £70, sundries £30: total £2300. I am indebted to Dr J Orbell for this reference. Dockyard workers at Devonport met to form a milling society in 1815; their water mill was built by 1817.

³⁰ H L Douch, *Cornish Wind mills*, Truro, 1962, p 60; Sun Insurance Register 11937/21/678047. The valuation was: mill £100, machinery £200, stock and utensils £300: total £600. I am indebted to Dr J Orbell for this reference.

³¹ *An Accurate Account of the Proceedings on the Occasion of Laying the Foundation Stone of the New Corn Mill*, quoted by Spencer, op cit.

³² Birmingham Reference Library, Boulton MSS (formerly in Assay Office), Albion Mill Box.

³³ Handbill *To those Inhabitants of Arnold who have aided or abetted the late Riotous Proceedings*, 18 July 1798. I am indebted to Mrs G Palmer for a copy of the original in her possession.

³⁴ See, eg valuation of Brixham mill, note 29 above. The moveable assets of Mansfield Club Mill were recorded in 1786. Stock was valued at £42 8s. 5d, book debts at £25 16s 3½d, and balance due to the society £70 14s 7½d, a total of £138 19s 4d: Notts RO, Portland MSS, DD4P 79/60-1.

³⁵ John Holland, *Tour of the Don*, Sheffield, 1836, pp 188-9.

welcome the falling in of a lease with such property upon it'.³⁶

III

During the grain crises of the later 1790s a new form of consumers' co-operative production emerged in which capital was raised by the sale of shares to the public, augmented in some cases by donations from local benefactors. These organizations were, in effect, unincorporated joint-stock companies; although wishing, perhaps, to avoid drawing attention to their non-corporate status, their promoters generally styled them societies rather than companies. Indeed several of the more successful were later to be cited by opponents of the Bubble Act as proof that a company need not necessarily involve monopoly. They did, however, arouse considerable opposition (see below). It would seem that in clinging to the banner of public utility, these union mill societies, as they were often called, were benefiting from some aspects of corporate status without, apparently, suffering from the constraints such as a limit on capital.³⁷

The first venture, appropriately named the Anti Mill Society, was founded in 1795 by 'the poor inhabitants' of Hull, who sought both approval and financial assistance from the mayor and aldermen of the town. A large seven-storey windmill with adjoining granaries and mill house was built in 1796, by which time the Society had 1435 members, and production commenced the following year.³⁸ Support for co-operative milling grew in Hull, and a second society was founded in 1799. A windmill of similar proportions to the Anti Mill was built and production

commenced in 1801.³⁹ The Whitby Union Mill Society was founded in 1800, and a seven-storey windmill was completed in 1801.⁴⁰ A similar venture was launched in Bridlington. A union windmill was built in Shardlow, Derbyshire, probably in the crisis of 1800–1801,⁴¹ and there were undoubtedly many others.

The first co-operative mill societies all employed wind power, a system well suited to a small-scale venture but less well adapted to more capital-intensive projects, such as those at Hull and Whitby where mills of factory proportions were erected. The Boulton and Watt experimental corn mill at Soho had demonstrated the suitability of steam power for milling in the early 1780s,⁴² and Pickard's steam corn mill was one of the objects of attack in the Birmingham bread riots.⁴³

There was a steam flour mill in Bristol in the 1780s, and Albion Mill in London was well known.⁴⁴ But while wind and water corn mills were not necessarily cheap, a steam corn mill could not be made fully operational under about £2000 at a conservative estimate. For this reason few societies considered steam power, and when they did the labour aristocrat shareholders were joined by radicals from the middle ranks of society: merchants, manufacturers and occasionally bankers.

The precedents for steam milling having been set in Birmingham, it is not surprising that the first steam co-operative mill in

³⁶ Ibid: 'Thus was exhibited at the outset a most egregious want of foresight in regard to the legal position of the property.'

³⁷ B C Hunt, *The Development of the Business Corporation in England 1800–1867*, New York, 1936, pp 25, 41. In 1800 a milling concern, The London Company for the Manufacture of Flour, Meal and Bread, was granted a Charter. It had a nominal capital of £150,000.

³⁸ (Revised) *Rules of the Hull Anti Mill Industrial Society*, Hull, 1856.

³⁹ (Revised) *Rules for the Government of the Subscription Mill Society*, Hull, 1853.

⁴⁰ *Rules for the Government of the Union Mill Society Instituted at Whitby*, Whitby, 1801. I am indebted to Mr P Burnett for the loan of his copy. For the later history of this Society see Jennifer Tann, 'The Whitby Union Mill Company — a Case of Early Co-operative Production', *Business Archives*, XXXIX, 1973.

⁴¹ *Nottingham Journal*, 13 July 1805. I am indebted to Dr J Orbell for this reference.

⁴² Birmingham Reference Library: Boulton MSS, J Buchanan to M Boulton, 9 Oct 1783, 5 July 1784.

⁴³ *Aris's Gazette*, 29 June 1795.

⁴⁴ Jennifer Tann, *The Development of the Factory*, 1970, p 79. £60,000 was invested in Albion Mill; for Albion Mill see Birmingham Reference Library, Boulton and Watt MSS, portf 152.

Britain was the Union Mill built by the Birmingham Bread and Flour Company in 1796–97.⁴⁵ The three-storey mill, 60 ft by 30 ft with an adjoining bakehouse, was designed by Boulton and Watt who also supplied the 16 hp steam engine.⁴⁶ The mill went into production in 1797 with 1360⁴⁷ shareholders, and the success of the venture led to a co-operative steam corn mill being built in Wolverhampton towards the end of the crisis of 1809–12⁴⁸ (Table 1). The role of Boulton and Watt in designing the Birmingham Union Mill led to their being consulted by interested parties in several other large industrial towns. The first enquiry was made by a society in London in 1798,⁴⁹ and this was followed in 1799 by a detailed questionnaire from Bristol's Society for the Poor.⁵⁰ In the same year the borough Reeve of Manchester asked Boulton whether the mill fulfilled its promoters' expectations since some of the leading citizens of Manchester had thoughts of starting a similar venture there,⁵¹ and in 1800 Benjamin Gott, in his capacity as mayor of Leeds, requested details of the financial structure and management of the Union Mill.⁵² The Hereford Subscription

Flour Company was founded in 1800,⁵³ and a Boulton and Watt engine ordered. But in 1801 the order was countermanded, and it is doubtful if the Society ever went into production.⁵⁴ Such was the interest aroused by the flourishing Birmingham Union Mill that the Privy Council set up a committee to examine the concern in 1800,⁵⁵ and in the event 'that their Lordships shall be satisfied that this Institution has been of great benefit to the inhabitants of Birmingham, they may possibly think of some proper method to recommend a similar institution to other great and populous cities and towns of the Kingdom'.⁵⁶ An attempt was made to establish a co-operative steam flour mill in Nottingham in 1807,⁵⁷ and the society appears to have begun building in that year but a poor response to advertisements for shareholders seems to have prevented completion.⁵⁸ A similar fate probably attended the Brentford Good Intent Society, which launched an ambitious mill and bakery building programme in 1802.⁵⁹

IV

Articles for the government of co-operative milling societies were drawn up at an early stage, specifying such matters as the price of individual shares, the maximum share capital to be raised, the maximum number of shares

⁴⁵ *Articles of the Birmingham Flour and Bread Co.*, Birmingham, 1796.

⁴⁶ Boulton and Watt MSS, portf 141.

⁴⁷ Birmingham Reference Library: *Examination Taken on the 4th March 1800 before the Lords of His Majesty's Most Honourable Privy Council Respecting the Institution called the Birmingham Flour and Bread Company, or Union Mills*.

⁴⁸ G P Mander, *A History of Wolverhampton*, Wolverhampton, 1960, p 152.

⁴⁹ Birmingham Reference Library: Boulton MSS, memo of M Boulton, Jan 1798.

⁵⁰ Birm Ref Lib: Boulton MSS, Birmingham Box 1: questions from Bristol to Union Mill and answers to T Clifford, Clerk, thereto.

⁵¹ Ibid, C F Brandt to M Boulton, 30 Nov 1799; M Boulton to C F Brandt, Dec 1799; PRO PC 2/154, p 283. Brandt investigated the possibility of obtaining a charter for a union mill. The Privy Council saw 'no objection to the plan'. Nothing seems to have materialized for some years but by 1820 there was a steam-driven Union Mill in Manchester containing eight pairs of stones and valued at £4000: Sun Insurance Register 11937/127/963633. I am indebted to Dr J Orbell for this reference.

⁵² Boulton and Watt MSS, Boulton and Watt to B Gott, 18 Aug 1800.

⁵³ *Articles of the Hereford Subscription Flour Company*, Hereford, 1801.

⁵⁴ Boulton MSS, W Symonds to M Boulton, 21 April 1801.

⁵⁵ *Examination taken on the 4th March 1800*, op cit.

⁵⁶ PRO: PC2/154, p 376, letter to Mr Clifford, Union Mill, Birmingham.

⁵⁷ *Nottingham Journal*, 11 April 1807.

⁵⁸ Ibid, 22 Oct 1808.

⁵⁹ The mill was to serve a large area. Shares were to be allocated to six divisions consisting of Isleworth, Brentford, Twickenham, Richmond, Hounslow, and Heston: *Society for Bettering the Conditions and Increasing the Comforts of the Poor*, III, 1802, pp 49–54. Two steam flour mills erected in Scotland in the early nineteenth century had certain features of co-operation in their organization, but they were producers', not consumers', co-operatives. The Glasgow Corporation of Bakers built a mill in 1800–01, and the Paisley Corporation of Bakers one in 1808. Both required members to grind all their grain at the mills: Boulton and Watt MSS, portfs 209, 402; Paisley Reference Library, *Articles of the Bakers' Society*.

TABLE 1
Summary details of co-operative corn milling societies

(b)	Share capital	Initial share price	Foundation date	Limit of shares per person	Cash dividend	Shares in instalments
Sheffield	—	£1	1795	—	—	yes
Hull Anti Mill	£2500 ^(a)	6/4d/£1 ^(a)	1795	5 ^(a)	5% ^(a)	yes
Birmingham	£20,000	£1	1796	20	yes	yes
Hull Sub Mill	£2000 ^(b)	14/2d	1799	—	—	yes
Hereford	£6000	£1	1800	50	—	yes
Whitby	£2200 ^(c)	£2 ^(c)	1800	1	—	—
Brentford	£2104	£2 2s	c 1802	3	—	yes
Nottingham	£4000	£2	1808	—	—	—
Wolverhampton	£10,000 ^(d) £15,000	£1	1812	20/40 ^(d)	yes	yes

Source: text.

Notes: (a) under the revised rules of the Anti Mill Society;

(b) under the revised rules of the Hull Subscription Mill Society;

(c) initially £1430 max capital (£1 7s per share including entrance fee) almost immediately raised to the figure in the table;

(d) raised at AGM 1813.

allowed per person, the voting power of shareholders, the composition of the mill management committee, and people to be debarred from membership.⁶⁰ Share prices could be as low as 6s 4d in the Hull Anti Mill Society, or 14s 2d in the Hull Subscription Mill Society, rising to £1 in the Birmingham, Wolverhampton and Hereford Societies. At Whitby the initial price was £1 7s but a call was made almost immediately for an additional 13s per share. Shares in the proposed Nottingham Society were to be £2, and at Brentford 2 gns each.

Provision was made by all societies for the purchase of shares in instalments, the rules of the Hull Subscription Mill Society emphasizing that the object was 'to make it convenient for the lowest capacity'. Subscribers to the Hull Anti Mill were to pay 1s 1d for four weeks and then 6d per week for four weeks. After payment of an entrance fee of 1s 2d, 1s per week was payable for thirteen weeks in the Subscription Mill Society. Shares in the Whitby Society could be paid for either at 1s,

6d or 3d per week. Shares in the Birmingham, Wolverhampton and Hereford Societies were to be purchased in instalments 'so as no such call shall exceed ten per cent on each share, and so as a Call is made at less distance of time than one month from the preceding Call'. Shares were transferable in all societies with the exception of the Hull Anti Mill Society.

In most societies there was an upper limit on the number of shares that could be held by one person. The Whitby Society was the most democratic in this respect, limiting its shares to one per person. Under the revised rules of the Anti Mill Society five was the maximum, but no limit was apparently set by the Subscription Mill Society. Twenty shares was the limit set by the Birmingham and Wolverhampton Societies (the latter being raised to forty in 1813), and fifty was the maximum any individual could hold in the Hereford Subscription Flour Co.

The maximum share capital set for a society building a windmill was around £2000—£2200 at Whitby to £2000 and £2500 under the revised rules of the two Hull societies (Table 1). Societies building steam mills

⁶⁰ See 'Rules' and 'Articles' previously cited. The section which follows is based on these.

realized that it was necessary to raise considerably more capital at the outset. Four thousand pounds was the proposed limit for the Nottingham mill, £6000 was the maximum set at Hereford, £10,000 (raised to £15,000 in 1813) at Wolverhampton, and £20,000 at the Birmingham Bread and Flour Co (Table 2). There is less evidence of the initial paid-up capital or of the number of shareholders for these societies. Hull Anti Mill had 1435 members in 1796, representing

TABLE 2
The Birmingham Bread and Flour Co, 1797

<i>Fixed Assets</i>	£	s	d
Buildings (mill, bakehouse, warehouse, pig-sties, cart shed, engine house, dwelling house)	2753	12	9½
Millwork, stones, dressing machine	622	12	11
Engine	900	0	0
Erection of engine	243	1	5
Bags	118	17	5
Live and dead stock	124	10	2
Furniture	32	12	3
Wharf and buildings	350	0	0
	£5145	6	11½

Recurrent costs per annum excluding grain purchase

<i>Labour</i>	£	s	d
Clerks	205	0	0
Millers	119	12	0
'Engineer'	36	8	0
Bakers	124	16	0
Carters	75	18	0
Flour weigher	41	12	0
		603	6 0
<i>Fuel consumption</i>			
393 tons coal	204	4	7
Wood for bake-house	13	6	0
		217	10 7
Ground rent		50	6 8
		£871	3 3

Approximate annual output (grinding 20 hrs per day, estimated 6-day week, 50 weeks per year): 108,000 Winchester bushels of corn ground.

Source: Examination taken on the 4th March, 1800.

at one share per member a paid-up capital of about £454. When the subscription book of the Birmingham Society was closed in June 1796, the Society had 1360 members holding 6279 shares, a large number of them owning only one share. A new subscription list was opened in September 1799 in order to raise a further £3000, and by March 1800 £2100 had been subscribed.⁶¹ By this time Boulton was convinced of the viability of the scheme, and purchased 400 shares for himself and his workmen. In Wolverhampton shares to the value of £9273 had been purchased within six months of the list being opened, again a number of shareholders owning a single share.⁶²

A high proportion, sometimes all, of the initial paid-up capital was invested in fixed assets, and where the initial paid-up capital was low, as in the two Hull societies, the sum subscribed was insufficient to pay for the mill. Hull Anti Mill cost £2200 to build, while subscribed share capital and donations together only amounted to about £798.⁶³ Hull Subscription Mill Society, too, did not raise sufficient capital initially, for although the share price was higher there were fewer shareholders, and the Society began a recruiting drive aiming to raise the number of shareholders to 1000. Even if this number was achieved, the share capital, together with donations, would only have produced about £779. The Society found a builder who was prepared to erect a mill, allowing the society four years in which to pay for it. Additional payments of 6d per week or per month, depending on the means of the shareholder, had to be made until the capital loan plus interest had been paid off.⁶⁴ The Whitby Society had to raise its share prices from £1 7s to £2 'as the first subscription was insufficient for the building of the Mill, granaries etc.',

⁶¹ Examination taken on the 4th March 1800 . . . , op cit.

⁶² William Salt Library, Stafford: *Rex v. B. Mander and Eight Others. The Trial at Large of the Committee of the Wolverhampton Flour and Bread Co. at Stafford Summer Assizes*, Wolverhampton, 1814.

⁶³ Rules of the Hull Anti Mill . . . , op cit.

⁶⁴ Rules for the Government of the Subscription Mill . . . , op cit.

and mention is made of 'those Gentlemen and Societies who have so liberally come forward to lend sums of money, for a time, without interest'.⁶⁵

Unless they also received interest-free loans, both the Hull societies must have made grain purchases on credit at the outset. The necessity for adequate circulating capital was recognized by the Whitby Society for the rules state that at every quarterly meeting 'each member shall pay to the fund one shilling until a sufficient sum is advanced for carrying on the Business'. Of the initial capital of £6279 raised by the Birmingham Bread and Flour Co, £5145 5s 11½d was absorbed by buildings and machinery, leaving £1133 14s 0½d for circulating capital. Out of this sum had to come ground rent at £50 6s 8d, the rent of additional buildings at £50, fuel bills of about £217 10s 7d, and labour costs of £603 6s, leaving little over for the purchase of corn⁶⁶ (Table 2). When replying to enquiries from Bristol in 1799, Boulton explained that no dividend had been given by the Society because it had been necessary to plough back profits 'as the capital in the first instance was barely enough to carry on the business'.⁶⁷ The buildings at Wolverhampton cost £6673, leaving a balance of £2600 in hand.⁶⁸

The capacity of few of the mills is known. The two Hull mills and the Whitby mill are likely to have contained four pairs of stones, Birmingham Union Mill had four pairs, and three to four pairs were generally employed at Wolverhampton.⁶⁹ A well-dressed pair of corn stones driven by a regular source of power could grind up to eight Winchester bushels of wheat per hour.⁷⁰ Allowing for the fact that at any given time one pair of stones

was generally out of action for dressing, these co-operative mills were capable of grinding between 1700 and 1750 bushels of wheat per week, and were of a comparable size to the newly-established merchant flour mills in some ports and large market centres. The Nottingham Union Mill Society estimated, probably on some statistics obtained from Hull, that it would produce 616,000 stones of flour per annum.⁷¹ The Birmingham mill ground about 18 bushels of wheat per hour and operated for 20 hours per day.⁷² The annual output therefore, would have been in the region of 108,000 Winchester bushels. Both the Birmingham and Wolverhampton Societies baked some of their flour into bread. Approximately 38 sacks of flour were baked each week at Birmingham, and the Wolverhampton Society distributed about 500 bushels of flour and 770 quartern loaves per week.⁷³

The day-to-day management of a co-operative corn milling society was supervised by a committee elected at the annual general meeting. The poorer members were prevented from playing much part in some societies by a proviso in the rules stipulating that committee members must hold more than a certain number of shares; five in the case of Birmingham, and twenty at Hereford. Moreover, the one share one vote system which operated in Birmingham lessened the influence they could have in the election of committee members. This was further reduced in the Hereford Society by a ruling that no person holding fewer than ten shares could vote for a member of the committee. The elected officers of the societies were expected to perform their duties in an honorary capacity, although under the revised rules of the Anti Mill Society it was agreed that officers 'shall receive such remuneration for their services as shall be agreed upon at any general half yearly meeting'. But there were clearly militant voices amongst the single

⁶⁵ *Rules for the Government of the Union Mill Society* . . . (Whitby), op cit.

⁶⁶ *Examination taken on the 4th March 1800* . . . , op cit.

⁶⁷ Questions from Bristol to Union Mill, op cit.

⁶⁸ *Rex v. Mander and Eight Others* . . . , op cit.

⁶⁹ Boulton and Watt MSS, pf 141; *Rex v. Mander*, op cit. The Wolverhampton Mill contained more, but rarely seems to have worked to capacity.

⁷⁰ Boulton and Watt MSS, Boulton and Watt to Birmingham Corn Mill, 16 April 1795.

⁷¹ *Nottingham Journal*, 19 Nov 1808.

⁷² *Examination taken on the 4th March 1800* . . . , op cit.

⁷³ *Ibid: Rex v. Mander*, op cit.

shareholders in the successful societies: Matthew Boulton received an urgent letter in June 1801,

Unless those subscribers to the Union Mill who hold the majority of shares exert themselves I fear the whole will be thrown into confusion. A most violent party has arisen chiefly amongst the working men whose minds have been so inflamed by false reports that they have determined to turn out the old committee altogether. They have held private meetings which have been numerous attended and they have chosen twenty-one fresh names for whom they are canvassing the subscribers.⁷⁴

In Whitby 'At the beginning of 1815 a revolution took place in the society attended with circumstances over which the historian would wish to throw a veil', and all the old committee members were ousted.⁷⁵ There may have been similar events in the Hull societies, which account for the revised rules made in the nineteenth century.

The committee was responsible for the hiring and discharging of all company employees. This was fairly straightforward in such cases as the dismissal of the clerk of the Birmingham Flour and Bread Co on a charge of embezzlement,⁷⁶ but more difficult in the crucial appointment of head miller and corn buyer when members of the committee were likely to have little or no knowledge of milling. A flour dresser was usually required, and at least one flour seller. At the Birmingham mill a foreman, two assistants, an engineer, two carters, and a weigher were employed in the bakery alone. Weekly committee meetings were held at which samples of grain were inspected and market prices considered. The Birmingham Society sent an agent to markets within a twenty-mile radius of the town. The officers claimed that the Birmingham market was unable to supply all the company's requirements, and that even if this were not so it would have been unwise to make all the grain purchases in one

market.⁷⁷ On being asked in the Privy Council investigation whether it had ever speculated in purchasing grain, the society replied that this had been done once when prices were low but that it had insufficient circulating capital to speculate. Three weeks supply of grain was generally kept, but 'if our capital was sufficient it would be better for us to have Four weeks Consumption in our warehouses, for, if the Flour was kept as long as Three Months, it would be the better for it.' However, the granary was not large enough for speculative buying, and some members considered speculation 'improper for poor men'.⁷⁸

Flour was carried from the mills to several points in the towns for sale. At this remove from the mills supervision became well-nigh impossible, and company rules begin to read like medieval gild regulations:

Any flour seller detected adulterating or selling flour to any person or persons not being members, or selling flour short of weight, or altering his or her scales, beams, or weights, so as to defraud the Members of this Society, shall . . . be discharged and excluded from all the benefits accruing from this Society.⁷⁹

Flour sellers appointed by the Hull Subscription Mill Company received £5 pa for shop rent and $\frac{1}{2}d$ per stone for selling flour. The Wolverhampton company supplied about fifty shops in the area whence members could buy their flour or bread.⁸⁰ In Birmingham holders of five or more shares had their flour and bread delivered to their houses, and 'for convenience of subscribers under five shares delivery homes are appointed in different parts of the town whence these subscribers fetch their shares'. Cash sales, an important feature of co-operation, were demanded by all companies, a condition which, as a Wolverhampton man observed, 'no trader, no individual can insist upon'.⁸¹ He added 'They turn their whole capital at least 6 or 7 times a year so

⁷⁴ Boulton MSS, G Simcox to M Boulton, 8 June 1801.

⁷⁵ New Rules were drawn up which were said to be 'partly tyrannical and partly puerile'. Rev G Young, *A History of Whitby and Streonashall Abbey* . . . , Whitby, 1817.

⁷⁶ Birm Ref Lib: Union Mills, Record of the Proceedings of the Committee (fragment), 17 Aug — 21 Sept 1798.

⁷⁷ Examination taken on the 4th March 1800 . . . , op cit.

⁷⁸ Boulton MSS, M Boulton to C F Brandt, Dec 1799.

⁷⁹ Rules for the Government of the Subscription Mill . . . , op cit.

⁸⁰ *Rex v. Mander*, op cit.

⁸¹ Ibid.

that small profits of each return make good profits on the whole.' Most of the companies would sell flour and bread only to shareholders, but shareholders in the Wolverhampton society were permitted to re-sell theirs at a fixed rate of profit. The Birmingham company supplied several local charities,⁸² besides the troops in the nearby barracks, and the projected Brentford Society intended using its spare capacity to mill for hire at competitive prices in order to increase its circulating capital.⁸³

In attempting to assess the achievements of co-operative corn milling during the Napoleonic wars it is important to consider the question of whom the mills were intended to serve. In their original petitions the promoters of the two Hull societies called themselves the 'poor inhabitants' of the town. The Nottingham Society hoped to recruit the 'poorer and middling classes', whilst the Brentford Society was founded for 'industrious mechanics labourers etc.', and its organization intended to be 'intelligible by the lowest capacity'.⁸⁴ The Birmingham company, on being asked if the 'poorer classes' subscribed to the company, replied 'A great number of them did.' Indeed, Matthew Boulton strongly resented a suggestion from Manchester that the Birmingham Union Mill was a philanthropic venture: 'This mill was not erected by the opulent for the benefit of the poor labouring workman, but it was erected principally by the latter class for the benefit of themselves.'⁸⁵ Nevertheless, the committee members of the Birmingham Flour and Bread Company included such people as William Whitmore, the engineer, and the Wolverhampton company was led by Richard Fryer, a banker, and Benjamin Mander, a japanner, as well as a screw maker, coal master, auctioneer, tax collector, printer,

grocer, and two 'gentlemen'.⁸⁶ The instalments on shares, even in the Hull societies, would have been too large and too frequently demanded for the very poor to have become shareholders.

The purpose of a co-operative flour milling society being to produce flour more cheaply than the local miller, most of the profits were distributed in kind. Each shareholder was usually required to take so much flour or bread a week per share at a price fixed by the committee. At Hereford shareholders were to have the option of sending their own grain to the mill to be ground or to purchase a similar quantity of flour each week, but this procedure would only have led to confusion. Each shareholder in the Birmingham company was required to take flour or bread equal to half a peck per week per share. Since both the Birmingham and Wolverhampton companies were bakers as well as millers from the outset, they were able to pass on the additional saving in the form of cheaper bread, for as the clerk to the Birmingham company said: 'we have an advantage over the baker by buying with ready money and by not giving credit for what we sell. Our sale is also more extensive and as we grind and dress our own wheat we can perform the whole operation of converting wheat into bread cheaper than others for we have the whole profit of the miller and the baker.'⁸⁷

Because the initial capital of a company was often little enough on which to build and run a mill, the question of cash dividends did not usually arise at first. Interest rates, however, were stipulated in some of the company rules. The revised rules of the Hull Anti Mill Society allowed for members to receive 5 per cent, the Nottingham Union Society envisaged a dividend of £1 14s being paid annually per share, that is, something over 75 per cent. And in 1800 a sum of £625,

⁸² The Asylum, General Hospital, Soup Shop and Blue Coat School: *Examination taken on the 4th March 1800* . . ., op cit.

⁸³ *Society for Bettering the Conditions and Improving the Comforts of the Poor*, III, 1802, p 50.

⁸⁴ Ibid: *Nottingham Journal*, 22 Oct 1808.

⁸⁵ Boulton MSS, M Boulton to C F Brandt, Dec 1799.

⁸⁶ *Rex v. Mander*, op cit. And by the mid-nineteenth century it was said that 'the shares are now held only by the middle class': S Timmins, ed, *Birmingham and the Midland Hardware District*, Birmingham, 1866, p 687.

⁸⁷ *Examination taken on the 4th March 1800* . . ., op cit.

amounting to almost 10 per cent, was set aside to be divided amongst the original subscribers of the Birmingham Flour and Bread Co.⁸⁸

The scale economies of purchasing wheat in large quantities and from different markets, in addition to the fact that flour was sold at cost to members, meant that flour was cheaper to shareholders of co-operative mills than for the general public who purchased from common millers. And a double saving was made in those societies which baked bread, prices being reduced by about one-quarter. The competition eventually forced some of the smaller local millers and bakers out of the market altogether, and forced others to reduce their prices, thereby ultimately benefiting non-shareholders. As a Wolverhampton baker said, 'There is no profit now got by the sale of flour or bread, the mill company sell it at such a low price.'⁸⁹ Although during much of the period 1797-1800 the price of wheat was higher in Warwickshire than in London, the price of the quartern loaf in Birmingham was consistently lower, often by as much as 3d. In December 1797 the quartern loaf sold in London for 8½d and in Birmingham for 6¼d. In 1799 the price began to rise sharply but remained lower in Birmingham, reaching 12d in London and 9d in Birmingham in October of that year. In February 1800 the quartern loaf was sold for 16½d in London and 13½d in Birmingham (Table 3).

That the larger co-operative corn mills were successful enough to pose a serious threat to other smaller milling and baking businesses is indicated by the fact that indictments were filed against the Hull Anti Mill Society (1811)⁹⁰ and both the Birmingham and Wolverhampton Flour and Bread Cos (1809 and 1814)⁹¹ by local millers and bakers,

TABLE 3
Prices of wheat (per quarter) and the Quartern loaf in Birmingham and London 1797-1800^(a)

Date	Birmingham		London	
	Wheat ^(b) s d	Bread d	Wheat s d	Bread d
1797 June	51 1	—	51 2	—
Sept	67 10	6¼	72 0	10½
Dec	53 11	6¼	47 8	8½
1798 March	54 6	6¼	51 10	8½
June	50 7	6¼	49 9	8½
Sept	51 4	6¼	48 0	8½
Dec	45 11	5¾	48 9	8
1799 March	51 2	5¾	50 10	8½
June	62 5	6¾	61 8	9¼
Sept	87 4	9	72 2	11
Dec	100 0	11	97 6	14
1800 Jan	104 11	11½	108 3	15½

Source: Examination taken on the 4th March, 1800.

Notes: (a) Price in the third week of the month;

(b) Average of the prices in markets of Birmingham, Warwick and Coventry (Birmingham Flour & Bread Co purchased wheat within a 20-mile radius of Birmingham).

first in the assizes, and (in the case of the Birmingham Co) subsequently in the King's Bench. The main point at issue was the claim that by raising a transferable stock to a large number of shareholders these societies contravened the Bubble Act. In each case judgement was found for the defendants, for while acknowledging that these societies were 'prejudicial to certain individuals', they had been instituted 'from laudable motives' and still were 'beneficial to the inhabitants at large'.⁹²

Central to the philosophy of co-operative production is the equitable division of profits between worker, capitalist, and consumer in the undertaking. In the early co-operative milling enterprises the consumer was the capitalist: as an inhabitant of Wolverhampton

⁸⁸ Ibid.

⁸⁹ Rex v. Mander, op cit.

⁹⁰ Rex v. Fearn and Others, *York Chronicle*, 8 Aug 1811.

⁹¹ Rex v. Webb, Barber, Townshend, Parkes, Ledsham, Warner, Pritchett, and Goddington, *Warwick and Warwickshire Advertiser*, 15 April 1809, 5 Aug 1809; *Reports of Cases Argued and Determined in the Court of the King's Bench*, XIV, 1812, pp 406-22.

⁹² Ibid.

commented, 'This Company went into market 15,000 strong, that is the market itself formed the company.'⁹³ The co-operative milling societies of the Napoleonic period, with their classic co-operative features of no credit, no debt, and fixed interest rates, should not be viewed as forerunners of the Owenite ideal, nor was there any obvious link with political activity. They were a spirited, rational, but only partial solution to a problem that affected all ranks of society, but particularly the lower orders. While some of these milling societies were short-lived, the majority survived into the 1830s and some into the full flowering of co-operative production of the 1860s.⁹⁴ As Marshall

pointed out in his address to the Co-operative Congress in the 1880s, 'the independent productive societies which we find now scattered over the whole of Great Britain are representatives of a very ancient race.'⁹⁵

amongst the descendents of the founders; the partnership between the Mansfield friendly societies and the Greyhound Benefit Society of Mansfield Woodhouse continued until 1820. The mill was sold in 1821. Hucknall Torkard mill, on the other hand, remained in operation until the 1880s, when a small steam mill was built in the mill yard 'to grind corn when there was no wind astir'. The two Hull mills and the Whitby mill were at work in the 1880s (augmented by steam power), as were the Birmingham and Wolverhampton steam mills (although not run as co-operative ventures). By this date many new co-operative flour mills had been built: *C.W.S. Annual*, 1883. See also Benjamin Jones, *Co-operative Production*, Oxford, 1894.

⁹⁵ Quoted in *ibid*, p 38.

⁹³ Rex v. Mander, *op cit*.

⁹⁴ The Woolwich shipwrights' mill remained at work until the 1830s, when it was sold and the proceeds divided

Annual List and Brief Review of Articles on Agrarian History, 1978*

By RAINE MORGAN

NINETEEN-SEVENTY-EIGHT yielded an abundant harvest. A major feature was the increased attention paid by prehistorians to agriculture. Continuing the search for origins Bender (20) notes that past theories have concentrated upon environmental and demographic explanations whereas both were dependent upon social structure. Similarly, in a review of work on early field systems, Bradley (28) maintains that social changes were a prerequisite of a change of agricultural regime where the supply of land was diminishing. There is growing evidence that the linear landscape features in England once thought to have served as mere trackways had more important functions. Thus Fleming (71, 72, 73) contends that Dartmoor reaves were linked to land use as well as a territorial division, while Higham (97) finds that in northern Cumbria dykes separated lowland arable from upland pastoral areas.

The practice of slash and burn is closely identified with primitive farming, and Reynolds (200) reports on recent experiments to establish its impact on yields. These indicate that burning is likely to have given a more than six-fold return to emmer wheat over a period of up to four years, while on unburnt ground germination was poorer, weed infestation greater, and yields fell sooner to an uneconomic level. The extent to which Britain is supposed to have been covered by forest in prehistoric times is questioned by Barker and Webley (13), who make a vigorous reassessment of soil studies and consider likely tool kits in order to evolve a new model of Neolithic agriculture. They claim that much of the vegetation in southern upland areas consisted of light woodland or pasture, and postulate an integrated mixed farming system where edge soils and upper alluvium were sown to corn and manured by stock which also grazed the chalk upland and valley clays on a seasonal basis. The Neolithic is also examined by Whittle (237), who finds evidence on southern chalkland of cessation of cultivation and woodland encroachment in the third millennium, and argues that this points to a failure of Neolithic peoples to achieve a stable adjustment to the environment. Instead increased numbers may have depleted the resource base, leading to population decline and even abandonment. For the

slightly later Iron Age Marshall (156) scrutinizes evidence of settlement, and concludes that the heavier, more fertile clay and gravel-based soils came under increased agricultural exploitation at this time, a fact which he links to pressure of population on limestone uplands. Wood and wooden artefacts have been neglected in studies of prehistory, but Coles *et al* (45) show their pervasive and important roles in the economy of the period. Woodland was coppiced, and the use of the raw material indicates considerable understanding of the functions and suitability of individual species.

One of the most exciting and controversial articles to appear recently is by Cooter (49), who adds a new dimension to the study of medieval agrarian history. He believes that past analyses have failed due to an over-reliance on technological, social, and economic explanations, and instead proposes an 'ecosystematic' approach. His thesis is that the level of available plant nutrients was the vital factor, and argues that these were cumulatively depleted by a pernicious open-field system which kept yields at a critically low level; neither the mouldboard plough nor legumes could apparently offset unavoidable losses due to nutrient leaching and soil exhaustion. Answering this, Loomis (145) questions the poor performance of the medieval farm, maintaining that it existed at a fairly stable ecological level with yields of 1000 to 2000 kg grains/ha. He further argues that new techniques as well as cultural factors have a place in analysis. A 1976 article by Brenner has inspired a number of medievalists to reconsider the view that class structure was the major determinant of change, and that feudal relationships were the fundamental cause of high rents, low manorial investment, and the subsistence crises of medieval Europe. Postan and Hatcher, for example (190), maintain that the more traditional demographic explanation, with population growth, land division, diminishing returns, and lack of new techniques has not been refuted. Bois (25) also argues that demographic determinism and economic explanations must have a place in models of historical development.

There has been further discussion of manorial farming. Postan's theses on twelfth-century developments are refuted by Bridbury (29), who denies that a wholesale disintegration of demesnes and commutation of services occurred in response to economic pressures. A study by Mate (161) of the accounts of Canterbury Cathedral Priory leads her to question the traditional

*Publications are dated 1978 unless otherwise noted. References to articles or off-prints should be sent to the Bibliographical Unit, Institute of Agricultural History, University of Reading.

view that landlords invariably prospered from early fourteenth-century inflation, arguing that costs rose faster than revenues. In a reassessment of E M Halcrow's work on Durham Priory in the fourteenth and fifteenth centuries, Lomas (144) maintains that demesne farming was neither universal nor fully commercialized here before 1325, while after that date it could still be profitable. And although leasing subsequently became more usual, this is related less to economic factors than to more purely domestic considerations, thus emphasizing the distinct and individual development of estates. The lack of uniformity is further underlined by Postles's investigation (192) into the administration of three Oxfordshire glebe-demesnes and the peculiar problems of smaller properties at this time. Without tenant land from which to obtain rent and labour services, they suffered severe cash shortages leading to low investment, understocking and reduced efficiency. On a quite different topic, Munro (170) details and assesses the relative merits of nine separate wool-price schedules dating from the later Middle Ages.

Landownership is a prominent theme in writings on the early modern period. Roebuck (201) examines the impact of the abolition of wardship in 1660, and indicates that it was of major importance in the rise of great estates and the sustaining of those of moderate or small size. Before, wardships were a drain on resources of landed families, but thereafter income could be accumulated during minorities for investment and improvement. The importance of minorities after the abolition is confirmed in a study of the Lowthers of Holker by Beckett (18), who also emphasizes that while inheritance and marriage were crucial for advancing family fortunes, inefficient estate management and personal extravagance contributed to their decline. The development of the active trusteeship of estates through the extended role of scriveners in the middle of the seventeenth century is described by Melton (165), and in another article Gentles (81) looks into the purchase of crown lands in a midland county at about the same period. He finds that upwardly mobile parochial gentry and yeomen pounced on what little land was left after purchase by outsiders, but local nobility and higher gentry showed practically no interest in adding to their estates in this way. The impact of sequestration, composition and confiscation of royalist land in the north is assessed by Phillips (185), who concludes that the penalties and taxes of the victors made no marked lasting impression on the estates of the gentry of Cumberland and Westmorland. Rents were generally downward during the 1660s and 1670s, and Davies (55) tries to establish why gentry owners in the midlands preferred to offer abatements or suffer vacant holdings rather than take farms 'in hand' and work them themselves. She finds no evidence that high labour costs were the cause. More likely factors

were a recognition of the financial hazards involved, lack of farming knowledge, and shortage of competent bailiffs. Debate continues over the open fields, Mazur (163) believes that risk-aversion may have been a significant motive for scattering of holdings (*pace* McCloskey) but not the sole one, and offers a new theoretical model 'in which the plowing of a strip of land was the effective means by which rights in the strip were appropriated, at least temporarily'. It is claimed that in such circumstances all teams would plough the best land first before moving to poorer ground, leading to the pattern of dispersed holdings and the alternation of strips among plough teams. In his study of reclamation in the pastoral uplands of the north-east between 1550 and 1630, Porter (188) finds the enclosure preceding it to have been uncharacteristically systematic and large scale, and in the improved surveying techniques which made this possible detects the origins of procedures widely used two centuries later. Rabbits are not usually regarded as livestock, but Sheail (209) shows how after their introduction in medieval times they were exploited like any other farm animal wherever ecological and economic conditions were appropriate. Ironically, although they were encouraged as an 'improvement' and were part of the intensified use of light marginal land during the formative years of the agricultural revolution, the new winter crops also allowed rabbits to become feral and a liability to farmers.

Treatment of the modern period included at least two contributions on documentary sources. Chapman (37) identifies problems in the interpretation of enclosure awards, and Vamplew (227) offers a word of warning on the Gazette corn returns. In an important article on agricultural efficiency in Britain and France, O'Brien *et al* (176) explore major factors affecting labour productivity. They find that Britain had more good land, but also important were the larger units of ownership and occupation which permitted less arable to be in cereals and more in manure-making animal fodders which boosted yields and generated profits for investment in artificials, drainage and machines. Evidence on enclosure has been subjected to further close analysis. Crafts (50) reassesses the relationship between this process and labour supply, and in particular the work of Chambers on Nottinghamshire which is suggested to be something of a special case. In his investigation of enclosures on five manors in the same county, Purdum (195) notes that the rate of return could vary greatly, from 6 to 31 per cent, largely reflecting the extent of prior reorganization and the number of freeholders. Interestingly, the author finds that rent rises were based on improvements in productivity which were due not to the adoption of new techniques but the more intensive use of existing methods, and economies due to more compact holdings. Linneman (138) has carried out an examina-

tion of enclosure in seventy-nine villages, and established that those with highest literacy levels enclosed earliest, as did those with greater weather variation — which might seem to undermine the McCloskey thesis on the risk-spreading function of dispersed holdings in the open fields.

The role of individuals in agricultural progress is explored in two articles. Farrant (68) examines the work of John Ellman of Glynde, and suggests that his success in introducing the improved South Downs in the late eighteenth century owed much to his business acumen and flair for publicity, though doubtless the strong upward trend in mutton and wool prices at the time was also a factor. Wasson (234) singles out the Third Earl Spencer, and claims that the respect he generated allowed him to become a powerful instrument for the conversion of farmers to progressive ideas. Caplan (35) views the landed élite in a less favourable light, and chronicles the parliamentary struggle for union 'poor law chargeability' 'to show that the main opposition to reform came from a section of the landed interest whose object was to maintain the status quo with regard to settlement law and to keep alive the pernicious distinction between open and close villages'. In a search for explanation of the alleged slow pace of development in lowland Wales in the nineteenth century, Colyer (47) suggests that a strong antipathy of tenants towards their landlords, reflecting deep cultural, religious, and political differences, was largely responsible. Suspicious of new ideas propagated by owners, tenants sought to maintain income after Waterloo by low-cost farming on increased acres rather than by exploiting the new husbandry. Also on innovation, Perkins (183) relates the tardy adoption of the scythe in parts of England in this period to the small stature of Irish migrant workers who were physically suited to the lighter sickle. Only when their living standards improved after 1850 did they accept the heavier tool. Farmers' politics have received little attention in the past but Fisher (69) examines a movement in the 1880s to gain parliamentary representation and radically reform tenant rights. Failure was mainly due to lack of support from farmers themselves, who were less concerned with questions of land tenure than the real problems of depression at the time. In an article by Perry (184) attention is focused on another neglected subject, that of finance, and a preliminary investigation made of the origins and destinations of the large capital sums invested in British agriculture during the high farming period.

Rural protest still figures strongly. Williams's study (239) of midland hunger riots in the 1760s confirms the view that those involved saw themselves as upholding popular convention. This is also apparent in evidence collected by Beames (17) on peasant assassinations in Ireland before the Famine. It has been claimed that nationalism and an oppressive land system was respon-

sible, though Beames argues that outrages were not against the system *per se* but rather against attempts to change it. Scotland was notable for its agrarian harmony, and Devine (59) seeks to explain why this should have been so. Reasons put forward include the long-hire system, payment in kind, and a more even year-round labour requirement compared to southern England. Also important after 1815 were the intensified use of land and industrial growth, while the greater mobility of the rural population allowed an equilibrium between labour supply and demand to be more readily maintained. Turning finally to industry, it is conventional wisdom that British firms were sluggish in meeting foreign competition abroad. However, Munting (171) would deny that this was true of agricultural engineering, and finds that both technical innovation and commercial enterprise were shown by Ransomes in pursuit of sales in the difficult and strongly contended Russian market.

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Book Reviews

S LIMBREY and J G EVANS (eds), *The effect of man on the landscape: the lowland zone*. Coun Brit Arch. Research Report No 21, 1978. 153 pp. Illus. maps. £10.

This volume contains the papers given at a conference organized by the Scientific Research Committee of the Council for British Archaeology on the effect of man on the landscape in the lowland zone of the British Isles. The twenty papers cover a wide range of topics, including the effect of plants and animals before man came on the scene, and so are difficult to review in the usual way.

The first paper by P J Fowler discusses the propositions of Sir Cyril Fox put forward in *The Personality of Britain* (1932) in the light of the current thoughts on cultural history and land use. The next paper is a discussion by J A Catt on the contribution of loess to soils in lowland Britain, and this is followed by a consideration of changes in the quality and distribution of soils by Susan Limbrey. Prof F W Shotton then demonstrates the archaeological inferences that can be made from a study of alluvium, taking as an example the lower Severn-Avon valleys.

Insect evidence for the effect of man on the landscape is summarized by P J Osborne from remains going back 6000 years. A wider range of biological remains is used by M A Robinson to compare the effects of man on the environment of the Upper Thames Valley during the Iron Age and Roman periods, grassland being predominant in both periods. Dr P C Buckland shows that the generally accepted hypothesis that grain production can be correlated directly with population numbers is unsound because it takes no account of loss due to insect attack during storage.

There then follows an account by Caroline Grigson of the larger ungulates that were present in Britain between the end of the last glaciation and the arrival of the first farmers, in which she points out at the start that the division into highland and lowland zones has little relevance. New data on the vegetational history of East Anglia using pollen analysis are presented by R E Sims, with particular emphasis on forest clearance. J G Evans, C French and D Leighton use land snail analysis in the tufa deposits of two late-glacial and post-glacial sites to study habitat change, and its relation to occupation by human groups.

A detailed discussion of Mesolithic settlement sites in the Weald and elsewhere presented by R M Jacobi shows that their density is greater than hitherto supposed, although they tend to be concentrated in certain geological conditions. The site density, together with pollen analysis, allows an estimate of population to be made. J M Coles, in describing man and landscape in the Somerset Levels, shows how the unique character of this isolated area of peat has enabled the interaction

between changing environmental conditions and human adaptation to be followed over several millennia. In a second paper on the area F A Hibbert deals with the vegetational history.

Colonization and land use in the Late Neolithic and Early Bronze Age are discussed by R Bradley, who contends that the settlement process of the Early Bronze Age owed part of their distinctive character to the economic changes that had begun in the preceding period. Sian Rees then considers the evidence for the tools, particularly the ard, available for cultivation in prehistoric Britain, and H C Bowen discusses 'Celtic' fields and 'ranch' boundaries, showing that the latter are better described by the non-specific term 'linear ditches'.

The evidence from place-names in Berkshire for the effect of man on the landscape is detailed by Margaret Gelling, who distinguishes between habitative and topographical place-names, pointing out that the latter are likely to be more informative. C C Taylor then shows that the location and form of villages frequently changed during Saxon, medieval and later times, and the volume ends with a paper by Willy Groenman-van Waateringe on the impact of Neolithic man on the landscape of the Netherlands.

The volume is well illustrated with maps and line diagrams, with some photographs, and there is a good index for a symposium of this type. One personal disappointment is the lack of special treatment for sheep, which have certainly been most important in moulding our landscape. Perhaps they await study by the modern methods used throughout these very illuminating papers.

M L RYDER

ROBERT NEWCOMB, *Planning the Past*. Dawson, Folkestone. 1979. 255 pp. Illus. £8.

Robert Newcomb's book has come at a time of renewed interest in the past in many countries. 'The visible past,' observes the author, 'is all about us, but we must learn to appreciate it as our heritage and as a recreational resource.' Before this, however, we need to complete an inventory of historic (including of course all prehistoric) features. With this, Newcomb argues, existing museums can take on new roles, and be supplemented with new recreational approaches to history. Further, if we comprehensively record the past in countryside and town, we can better decide what features have to be sacrificed to essential change and which should remain to comprise a fuller and more economic use of the past.

Interestingly, the author is North American: his experience in Britain and Denmark, besides the United

States, allows him to compare the attitudes to the past found in these three countries. In Britain we have long been preoccupied with the conservation of nature and historic buildings. But neither of these can properly be separated from the immensely interesting, man-moulded landscapes of which they form part. British and Continental countrysides abound in features that often have triple value as relics of human occupation and management, as habitats for wildlife, and as collections of species. The real value of such humanized landscapes (as Newcomb points out in examples like Bodmin Moor) lies in the fascinating insights which they give us into the ways in which past communities related to one another and to their surroundings. Indeed, the large number of settlement sites, routeways, and cultivation areas now identified in Britain has required a major rethinking of past population sizes and distributions, and of the technical capabilities of our prehistoric and Roman and Saxon forebears.

Newcomb's book falls into three parts. The first considers 'current planned uses of the past as well as techniques and programmes for expanding historic preservation and making it more useful'. Part 2, in fuller detail, 'surveys rural and urban, industrial and political impacts' on the terrain of the three countries studied, citing a number of important historic landscapes as case studies. Part 3 examines methods of landscape evaluation. The author offers a good review of the existing literature — with extensive chapter bibliographies — and much useful material on making historic landscape inventories. The book considers urban and industrial, as well as rural, landscapes. For each, and drawing especially on his Danish experience, Newcomb stresses the need to find 'recycled' uses of the visible past which meet future requirements, whilst maintaining visual variety and continuity with that past. For this, systematic inventories of artefacts are a basic first step. In view of these aims, the sites and monuments records, for example, now being developed in many English counties are a good start, but they will often need a great deal of enhancement for future planning.

Chapter 3, 'The Inventory and Resource Assessment', makes good reading: it includes the first of a number of very useful tables of artefacts of different ages and origins which comprise 'items of visible history' of Denmark, Britain and the author's home state of California. Newcomb observes that full surveys of artefacts as a basic input to planning are very labour-intensive and time-consuming. However, he nowhere discusses in detail the scope for using a handful of professionals, with some temporarily hired graduates and many more volunteers (trained, eg in winter evening classes), for survey work — as is already being done with remarkable success in several English counties. The cuts in public spending, the expected growth of

'spare time', and the urgent need for survey and conservation through the threat of continuing rapid land use change all indicate new opportunities for the competent, dedicated, and personable volunteer. Moreover, Newcomb's publication format has probably precluded a fuller discussion on such important issues as a consensus on recording procedures (including, perhaps, a survey notation) ideally needed for meaningful data comparison between regions and districts in any search for rational conservation priorities on representative landscapes.

In Chapter 4 the author discusses the effectiveness of conservation legislation in Britain, Denmark and California. In both Britain and Denmark management agreements may be made with farmers by the government covering a limited number of scheduled artefacts on their lands; in practice, however, the compensation offered is quite unrealistic in these years of inflation, and many farmers resent state interference. From this it is clear that if classic landscapes, like that (detailed later by Newcomb) at Wormleighton in Warwickshire, are to be retained, then some better *modus vivendi* will have to be worked out between government, academics, farmers, and the general public. Here the Danish Nature Park idea (noted carefully by the author) — incorporating integral elements of cultural history as well as ecology in landscape survey and management — offers considerable potential. It seems we may yet have much to learn from adapting this, and North American experience. But, as Newcomb observes, we need to know a lot more about visitor impact on historic sites and landscapes, and, indeed, about what motivates the general public to visit historic (including prehistoric) sites at all.

Two commendable features of Chapter 6, 'Landscape History Relics in the Rural Scene', are the diagram included on p 121 'the rural landscape in its historical dimension', and the table between pp 124 and 125 listing illustrations of preferred study topics in rural landscape history in Britain, Denmark and the USA. Here it is a great pity that the author's North American perspective is largely limited to California, and that space (and perhaps limited study opportunities) prevent fuller comparative discussion of work in France, and especially the Netherlands and West Germany. However, speaking generally, Newcomb notes that 'the challenge is to retain the essential elements and overtones of history while at the same time agriculture is modernised for the benefit of rural producers and urban consumers.' But (Chapter 9) 'it is not easy to monumentalise the fields and hedgerows of an entire nation, nor to construct living museums which adequately tell the story . . . '.

In Chapter 10 the author concludes that in 'planning the past to serve the present and the future . . . [we need] . . . to make certain that sufficient historical material, along with its supporting artefact scenery, is

present so that recreation has the potential to become a learning experience as well as being a diversionary one . . .'. But this will require 'a greater public awareness and appreciation for visible history as well as a dedication to its continuing preservation'. One aspect not covered fully by the author is that we are often (with nothing yet like a full record of the visible past) making presumptuous judgements in present-day planning schemes as to what future generations will consider was worth recording and conserving. There seems no real answer to this much begged question, but what we can do as a legacy to our successors is to conserve — or at least survey — as much as we can, guided by the best of our own lights. Despite obvious limitations, Newcomb's book deserves to be widely read and well heeded. The text reads well, despite occasional lapses into American style. The case studies stress the value of comparing the approaches to landscape survey and conservation found in countries with different settlement histories. It is only a pity that the economies of format have not allowed fuller discussion and illustration of some of the examples used.

ROGER MILLMAN

FRANÇOIS SIGAUT, *Les Reserves des Grains à long terme. Techniques de Conservation et Fonctions Sociales dans l'Histoire*. Editions de la Maison des Sciences de l'Homme, Publications de l'Université de Lille. 1978. 203 pp. Illus, maps, diagrams. No price stated.

The reasons for the change from food gathering to a more or less settled living place and concentration on agriculture, the working of the soil, the planting of seeds, the protection of the growing crop from animal and vegetable predators, and finally the harvest and storage of the product, have not yet been satisfactorily adumbrated. It has not been more than hinted at in M Sigaut's book, which I am sure he would be the first to acknowledge.

May I repeat for sufficient emphasis: the progression from food gatherer, the collection of wild herbs and fruit, and honey, to a settled way of life only became possible to man when he learned how to grow crops, possibly by accident! And he must have known how to preserve some stores to maintain him until the next harvest. No doubt his activities were a combined operation, partly growing, partly gathering, and partly flesh hunting. The preservation and comparatively long-term use of stored products was the beginning of man's journey towards megalopolis. At first it was no more than a meagre provision which it was hoped would last until the next harvest.

So little is definitely known, and so much must be learned, that one must welcome Sigaut's work with a measure of acclaim. He has made an important addition to knowledge, although he modestly admits that there is much more to be learned. The first part of the book

describes the involved technicalities of storing grain in silos, the methods employed in different ages and places, and the theories advanced by the literary advocates of such procedures. Theories are substantiated by an imposing set of documents derived from the contemporary literature of many nations and places.

We do not know why some societies developed agriculture. Indeed, as knowledge increases so conclusions become less definite. But we do know that it happened, and not only in one place. Theories multiply but uncertainty lingers. M Sigaut has written a scholarly thesis, and has collected a bibliography and illustrations which support his admittedly tentative conclusions. There is a great want of first-hand studies, exact and complete, of peasant methods of grain storage, and this is one step in the right direction.

G E FUSSELL

HERMAN VAN DE WEE and EDDY VAN CAUWENBERGHE (eds), *Productivity of Land and agricultural innovation in the Low Countries (1250-1800)*. Leuven UP. 1978. 187 pp. Tables, graphs and map. No price stated.

Conscientious researchers are always ready to seek new sources of information. Today tithe records have become important to the historian, that is to say more important than the less recondite sources used in the past, but it does seem to me that agricultural historical research is today less directed towards the actual practice of farming than to the financial and economic circumstances in which the work was done. This is not, of course, to say that the farmers' crop yields, their price, and his reward, out of which he must pay his rent, and reluctantly his tithes, were not of the most exacting importance to him.

The various papers presented here are very concerned with the incidence of tithe (and possibly rent) as an indication of the processes of farming pursued by the farmers who paid these charges; but various questions present themselves, and are not to be very easily answered. Perhaps this is the aim of this series of very careful studies.

One could possibly ask: what is productivity? is it output in volume; output in monetary value; output as soil conservation? a scale or scales? Probably in the end it may be the measure which determines the buying price of the land or the amount a farmer can secure upon a mortgage.

It has become an accepted canon (to which I have heartily subscribed) that the farming of the Low Countries has been an example to all of Europe, not excluding Great Britain. Here some doubt is presented about this, but possibly only figuratively! Belgium and Holland certainly lived a disturbed life with all the many wars that were experienced. It emerges quite clearly from these papers that Weston's approach to the farming of Brabant and Flanders must be looked at

more closely, perhaps modified by the war damage (which was rather continuous, or at least sporadic), and the consequent fluctuations in production possibly by area as well as yield.

In conclusion, I would venture to say that these essays seem to be about the profits to be secured by farmers, and not about the methods they employed to cultivate crops and breed livestock; but they are no doubt of value to the economic historian. I can say no less and no more, but must postulate the question which modern studies enquire into: how does one find out how the farmers worked in the past?

G E FUSSELL

CHRISTOPHER CLAY, *Public Finance and Private Wealth: The Career of Sir Stephen Fox, 1627-1716*. Clarendon Press: OUP. 1978. xvi + 362 pp. £12.50.

Born in the village of Farley near Salisbury in 1627, of parents who occupied 'the lowest fringe of that blurred borderline between gentleman and peasant', Stephen Fox left school at thirteen to become a page-boy in the Court at Richmond. He remained in the royal service for most of the next sixty-three years, one of his last duties being to lead Queen Anne down from the throne after her coronation. In the course of this long career Fox became a leading expert in government finance and served almost continuously and with great assiduity as one of the Lord Commissioners of the Treasury between 1679 and 1702. Moreover, long before this, by using various official positions as a basis for independent financial operations, he amassed a huge fortune which he subsequently invested in a mixed portfolio which included land as well as almost every other type of investment then available, except for the securities of the joint stock trading companies. In the mid-1680s a nephew justifiably described him as 'the richest commoner in three kingdoms'.

Fox's great opportunity came soon after the Restoration when, as a reward for his efficient service as *maitre d'hôtel* to the exiled Court in the 1650s, he was appointed to the Board of the Green Cloth, and in 1661 to the post of Paymaster of the Guards. In this latter capacity, whose responsibilities grew with additions to the Guards, its extension to garrison troops, and wartime expansion of the army, he was immediately confronted by the long-standing problems associated with the Crown's inability to pay its forces regularly and promptly. Fox's response was to use his own credit with London bankers to borrow the money required for payments, and then to re-lend it to the Crown, a system which proved so successful that it was quickly formalized and later extended to include the Royal Household and various other spending departments. By ploughing back into the scheme most of what he made from it, Fox reduced his dependence on borrowed

money and increased the rate at which he grew wealthy. He also began to act as something of a banker himself, accepting loans from some private individuals, and lending to others. Together with the Crown's need for his services, Fox's special position as creditor and departmental treasurer enabled him to survive the 'Stop of the Exchequer'; indeed, because thereafter the flow of government money increased, he was able greatly to expand his activities in the private sector. Though ousted from the Paymastership by Danby in 1676, he regained the post briefly before resigning to become a Lord Commissioner in 1679. Subsequently he remained extremely influential and successful, both as a government adviser and administrator and as one of the wealthiest moneyed men of his day. His investments included an extensive estate in London and the West Country, fee farm rents, offices, pensions, and annuities; he lent hugely to several important public figures; bailed out three well-married offspring from the consequences of their or their partners' extravagance; helped numerous other relatives to make their way in the world; and was a major benefactor first to Chelsea hospital and later to his birthplace, Farley.

Although almost any book on Fox would be of interest, it is difficult to do justice to the scope and excellence of this one. It is cleverly structured: by combining a chronological and a thematic approach Dr Clay deftly steers the reader through the complex public activities of Fox's early and middle career to the more private concerns of his later years. Moreover, by regularly quantifying and tabulating the extent and composition of Fox's wealth, he lays the basis for an astute analysis of the significance of Fox's role in the history of English government finance. He establishes beyond reasonable doubt that Fox was a man of great probity; than in regard to the Paymastership he acted as a risk-taking financier and not as a profiteer; and that his success greatly eased the problems of a series of hardpressed administrations. While the major development of credit techniques came only after 1689, Fox's operations were the 'ultimate stage' in the previous evolution of expedients. In addition Dr Clay charts the major influences, familial and financial, on Fox's investment behaviour. His early interest in accumulating real estate faltered in the late 1670s and never recovered, primarily because of heavy mortality among his children and his sole male heir's failure to produce a child. To someone who never aspired to be a landowner as such, a further argument against land purchase was the low return it offered (5 or 6 per cent gross and significantly less net) compared with investment in private lending and fee farm rents (around 6 per cent), lending to the government on tallies (7 or 8 per cent), or annuities (usually well over 10 per cent). Indeed, in a valuable illustration of the regional impact of the agricultural depression of the late seventeenth century, Dr Clay shows how difficult it was for Fox

merely to run his estate on a care and maintenance basis. He closed the home farm at Redlynch; made substantial loans to tenants, and withstood heavy rent arrears; and finally, faced with a drop to only 2½ per cent in the return on his original investment, sold some land and attempted to cut costs elsewhere by increasing the number of life-tenancies on his property. He later acquired more land in part repayment of some of his huge loans to debt-ridden aristocracy and gentry; and he spent considerable sums on land in repairing the fortunes of his surviving offspring; but only latterly, after a second marriage at the age of seventy-six had produced four children including a son, did he regain interest in his estate.

In measuring the progress of this remarkable man Dr Clay has rescued him from the obscurity which so often envelops those whose activities were primarily administrative rather than political, and whose recompense was private wealth rather than public acclaim. His painstaking research, penetrating analysis, and considerable literary powers (all exercised on a broad canvas) have also combined to produce a work which all those interested in this period will find deeply rewarding.

PETER ROEBUCK

H S A FOX and R A BUTLIN (eds), *Change in the Countryside: Essays on Rural England, 1500–1900*. Institute of British Geographers. 1979. 187 pp. Maps and figs. £8.50.

This collection of essays sponsored by the Historical Geography Research Group of the IBG is intended not as a stocktaking or complete interpretation of rural change but rather as a sample of the present research being carried out by historical geographers. It is also, in fact, excellent value for the agricultural historian, who will find much here to interest him.

The collection begins with a discussion by Stuart Macdonald of George Culley, the well-known Northumberland pioneer: Macdonald emphasizes in particular Culley's concern with obtaining and disseminating information about techniques which would pay (as distinct from those which were merely interesting), and how large a role was played by farmers' correspondence in the spread of knowledge. John R Walton's analysis of factors in the adoption by farmers of new machines gives most significance to farm size and the communication of information: landlords and agricultural societies played only a limited role. However, H S A Fox's study of local farmers' associations tends to run counter to this finding. He notes their varied activities to the end of diffusing knowledge, including local shows, discussion meetings, visiting speakers, prize essays, and the maintenance of libraries.

Two of the essays are concerned with the more traditional subject of enclosure. R A Butlin reviews the

various forms taken by enclosure in the less well-studied period 1600–1750, and the extent of the area affected in the various regions of the country. R I Hodgson concentrates on County Durham in 1550–1870, and traces the connection between enclosure and the growth of market-oriented farming, particularly the rise in the demand for grain following the appearance of a large coal-mining population.

John Patten's essay on occupational structures in the East Anglian countryside of 1500–1700 makes use of wills as a primary source, though he is careful to notice the problems of the material. There was, he finds, a substantial increase in artisan-retailers and in people engaged in the distributive trades, and, in general, the growth of a more sophisticated occupational structure. The part played by landowners in the development of coal mining in south-west Lancashire is examined by John Langton. Their role, especially that of the smaller gentry, he finds, diminished after 1670 when the capital requirement and the degree of risk both increased; a larger part was then taken by merchants and other non-landowners.

Two final essays are concerned with horticulture, silviculture and designed landscapes. P J Jarvis relates the introduction of new plants (especially the larch, cedar of Lebanon, walnuts, and hickories) to the vogue for designed landscapes, developments in overseas trade, and the growth of interest in the scientific and visual aspects of the new introductions. P F Brandon is concerned with designed landscapes in the south-east of England, and makes a number of interesting points in connection with the changing attitudes to scenery, the influence of better communications through turnpikes, and the development of *fermes ornées*.

This is altogether a most valuable compendium which is bound to be added to students' reading lists. It is an impressive indication of the range and quality of the work being carried out by historical geographers, and, indeed, one is caused to wonder whether it could be easily matched by the present generation of agricultural historians.

G E MINGAY

HERMANN WELLENREUTHER, *Repräsentation und Groszgrundbesitz in England 1730–1770*. Klett-Cotta, Stuttgart. 1979. 417 pp. Map, bibliography, 35 tables appended. No price stated.

The title of Hermann Wellenreuther's *habilitationsschrift* promised something to agricultural historians that it had no intention of providing. 'Representation in Parliament and Large Ownership in 1730–1770' is certainly about great landowners (the Duke of Bedford and Lord Gower), but it is only marginally about the relationship between them and their farm tenants in so far as they had a vote. It is about fairly successful attempts of noblemen to control votes in Bedford,

Tavistock, and some south-western constituencies in the case of the Duke, and in Newcastle under Lyme and Lichfield in the case of Lord Gower.

Both these great landowners (and Bedford was also a big urban landowner) had political ambitions, requiring adherents in Parliament. Wellenreuther has proved in great detail that whatever the local voting system, there were numerous ways whereby a more or less durable and reliable relationship could be built between voter and nobleman. The nobleman (large landowner) purchased town property, assisted the town when it was in debt, when the poor needed relief, or industry was depressed, made loans to those requiring them, and rewarded adherents by obtaining places for them. The author maintains that during this period, and at least in the cases of these two landowners, the relationship of landowner and voter involved rather more than a flow of resources to the voters, repaid in votes. A contested election was less the rule than the exception. The relationship of nobleman and voter was a customary beneficial mutual interdependence, and not markedly corrupt. While liberal treating of adherents was common at election time, direct pecuniary bribes were not the rule.

Though the constituencies described were small, and certainly involved in rural affairs, they were urban, and it would have been more of interest to the agricultural historian to hear of county elections where farm tenants were influenced by their landlords. The bonds between nobleman and farmer would then, no doubt, be of a different nature.

Wellenreuther's book does, however, use correspondence, accounts, and other estate materials as a source for Parliamentary history. This breaks new ground, as Namier and his followers did not use them. The book is very learned in manner (as a *habilitationschrift* must be), and very fully referenced. Perhaps it proves its case too fully. Indeed it is a little dull. The author has a true sympathy with eighteenth-century England, and, miraculously, makes no errors in referring to titles. He is aware that our nobility have no equivalence with those on the continent. Some of his abbreviations are perhaps not standard. The appendix contains some excellent tables, including some on Bedford's and Gower's incomes. The bibliography is detailed; the index helpful.

In the final chapter the author reminds us that during this period three-quarters of legislation was in the form of Private Bills, showing that the interaction of patron and voter was immediate and real. But the author here gives a more general view of how patrons gained a hold on seats, showing that the merchant and urban magnate were appearing with methods of controlling the electorate peculiar to themselves.

We welcome this detailed and dependable work from a German scholar using English estate documents, hoping that he will continue with this type of work,

endeavouring to answer some more of the hundreds of questions he asks himself about big landowners in the course of the work.

D J DAVIS

ALAN W BLACK, *Organizational Genesis and Development: A Study of Australian Agricultural Colleges*. University of Queensland Press, St Lucia. 1976. xii + 316 pp.

Agricultural colleges today in Australia operate in a difficult and changing environment. Compared to other post-school and higher education institutions, most of them are very small in terms of student enrolments, and located well outside the major centres of population. They are also more costly than most other tertiary institutions to operate in terms of recurrent expenditure. As a result they are often under pressure to diversify and to find new roles. At the same time there is considerable uncertainty about the precise function that agricultural colleges should perform in relation to agriculture and to farming. This, of course, is a reflection of changing patterns in the agriculture scene.

Dr Alan Black and his colleagues at the University of New England (at Armidale, New South Wales) have performed a useful service in helping increase our understanding of the role and dilemmas of agricultural colleges in Australian higher education. The results of their major team project of the early 1970s, which studied four contemporary colleges, were reported in the volume, *Consensus and Conflict in Agricultural College*.

This book is a development from that research and similarly is a comparative study of agricultural colleges. However, its focus is historical rather than contemporary. In brief it is a study of the establishment and early development of the older established Australian agricultural colleges — Roseworthy (established 1885), Dookie (1886), Longerenong (1889), Hawkesbury (1891), Queensland — often called Gatton — (1897), and Muresk (1926). The author attempts to develop answers to five key questions. Why were these colleges established? How were they organized? How did they develop? Who were the men who guided their growth? What problems and obstacles did they have to overcome? He does this very competently, drawing on a wide range of historical sources and sociological literature, and using with ease the skills and insight of both the historian and sociologist (which is by no means a small feat).

Organizational Genesis and Development will appeal to a wide range of readers including students of educational administration, higher education, sociology of organizations, and agricultural history. In short, it is a first-rate original piece of research, well presented and well argued, and making useful contributions to a number of related fields.

GRANT HARMAN

ALAN W BLACK and RUSSELL A CRAIG, *The Agricultural Bureau: a sociological study*. University of New England. Armidale, NSW. 1978. viii + 165 pp.

This brief account of the Australian Agricultural Bureau combines some history with empirical sociology to provide a useful compendium of information about a little known aspect of rural organization. The authors have been modest in their objectives, and the heavy empirical bias limits the significance of the study from both the historical and sociological perspective. The result is that the work will be of interest mainly to those with a special interest in the Bureau.

The Bureau is a self-help organization which exists currently in two Australian states, New South Wales and South Australia. Its purpose is to bring farmers and graziers together in small groups at the local level to discuss such practical matters as the use of machinery, seed selection and marketing methods. In the more active branches meetings are held monthly and are usually based on a lecture, film or demonstration. Meetings supplement the work of the state departments of agriculture, and extension officers find them a useful way of meeting farmers informally and communicating information personally.

Black and Craig's historical section (almost half the book) reveals the weakness of the self-help style of organization compared with the bureaucratically-controlled departments of agriculture and the centralized pressure groups such as the farmers' and graziers' associations. In South Australia the Bureau was the offspring of economic adversity. After years of monocropping on sandy soils, declining yields, and falling prices, the wheat farmers of the colony were driven to accept the proposals of Albert Molineux, an energetic agricultural journalist and publisher who had been influenced by the example of the United States Department of Agriculture. The Bureau, a loose confederation of small clubs (perhaps the country equivalent of the WEA), was established in 1888. Western Australia and Tasmania attempted to follow suit but without success.

New South Wales adopted the system in 1910 as a result of official sponsorship.

Bureau branch numbers and membership in the two states grew rapidly until the 1930s. The first quarter of the century was a period of favourable commodity prices, expansion of the wheat frontier, closer land settlement in association with subdivision of some of the larger grazing properties, and the growth of inland communities. Black and Craig do not explore the role of the Bureau at this time, but it may have played a part in encouraging farm mechanization and more intensive cropping associated with the use of superphosphate. Since World War II, however, the Bureau has been in almost continuous decline because of rural depopulation, the fall in the number of small farmers, the rise of television, and more effective methods of agricultural extension. Only in South Australia does it seem to have much of a future.

The sociological section illustrates the limitations of research based on a questionnaire and interview schedule dominated by 'objective' and restricted choice-type questions. Black and Craig are able to present a reasonable profile of Bureau members but they are unable to penetrate beneath the surface. Bureau members are older and better educated than the average for the farming community. Membership is seen as a way of increasing instrumental knowledge: demonstration days and lectures on practical farming matters are regarded as the most effective use of time. We are even told in all solemnity that declining branches have the greatest difficulty in attracting suitable leaders. These are lean gleanings from what was, formally, a comprehensive survey. Surprisingly, the historical material is not used to present a view of the changing pattern of rural education, and the possible future of the Bureau. Nor is there an assessment of the Bureau in relation to other sources of information available to farmers. The authors have opted for formality rather than insight, and their approach is only sociological in the restrictive style of positivism.

C B SHEDVIN

Shorter Notices

JOAN THIRSK, *Horses in early modern England: for Service, for Pleasure, for Power*. The Stenton Lecture, 1977; Univ of Reading. 1978. 28 pp. 65p.

In this stimulating lecture Joan Thirsk argues that historians have underestimated the importance of the development of horses, and the trade in horses, as factors in the growth of the English economy between 1500 and 1700. She notes that in 1500 coaches, wagons

and carriages were rare, and only the wealthy and important travelled on horseback. By contrast a French visitor in 1699, Guy Miège, wrote that 'the English nation is the best provided of any for land travel as to horses and coaches. . . . Travelling on horseback is so common a thing in England that the meanest sort of people use it as well as the rest.' In a comparison which is not altogether fanciful, Joan Thirsk compares the

economic effects of the growth and differentiation of the horse trade with that of the motor industry in the twentieth century. Its influence percolated down till no one was left untouched.

She discusses three basic causes for this transformation in the role of horses. They became much more important in military affairs (especially for transporting supplies), and the prodigal wastage of Henry VIII's wars acted as a strong stimulus to increase and improve the supply of English horses. Government policy encouraged the nobility and gentry to keep and breed fine horses. Secondly, fashion was a powerful factor. As the use of coaches and carriages spread, and as the new sport of horse-racing took hold (from about 1585), people vied with one another in the ostentatious display of horses and their livery. Finally, with the great growth of internal trade, the need for horses of all sizes and grades to pull numerous wagons, barges and carts provided perhaps the most deep-seated and profound stimulus of all. All these things encouraged the horse trade, which in its turn reacted on them, and made their continued expansion possible. Once again, Joan Thirsk has drawn our attention to a fruitful new aspect of early modern history, and this pioneering study will no doubt encourage more research on this topic.

MICHAEL HAVINDEN

C T SMITH, *An Historical Geography of Western Europe before 1800*. Revised edn, Longman. 1978. xviii + 622 pp. 90 maps, 42 plates. Paperback £7.95.

This valuable and well-known text, first published in 1967, now appears in a revised edition in paperback. The major change in the revised edition is the inclusion of a postscript which briefly reviews new interpretations of the subject and adds a useful annotated bibliography of recent works. The original text, tracing developments from prehistoric times, and including substantial chapters on rural settlement, agrarian structures and field systems, and agricultural and regional change — all amply illustrated by excellently reproduced maps and photographs — remains largely unchanged.

G E MINGAY

JOHN CHAPMAN, *The Common Lands of Portsea Island*. Portsmouth Papers No 29. Portsmouth City Secretary, Civic Offices, Guildhall Square, Portsmouth. 1978. 22 pp. Illus. 50p.

This is an excellent case study, well illustrated with maps and photographs. Its particular interest lies in the manner in which the new town of Portsmouth was first inserted into the common field systems of the

island, and then much later brought about their disintegration. Until the eighteenth century the town had an important farming population which had taken land in the common fields around older settlements and added new fields from the waste. The author demonstrates in detail how various parts of the original field organization were abandoned as urban development accelerated, ending finally in the eighteenth and early nineteenth centuries with new streets and buildings directly superimposed on the strips. Portsmouth offers one of the best examples of this process.

J A YELLING

HUGH TORRENS, *The evolution of a family firm: Stothert and Pitt of Bath*. Bath, Stothert & Pitt Ltd. 1978. 86 pp. No price stated.

The origins of Stothert and Pitt date back to 1785 when George Stothert took over an ironmongery business in Bath, followed in 1815 by the establishment of an ironfoundry as a separate undertaking. The foundry appears to have produced the usual range of domestic and industrial castings for a local market, as well as probably a few basic agricultural implements. The firm's interest soon moved into heavy engineering, and by the late nineteenth century it was specializing in steam cranes, pumping machinery, and concrete-making equipment. The history stops in 1902 when the family association with the firm ended.

The principal value of Mr Torrens's book is to technical and business historians. His approach is scholarly, with generous footnotes and a useful index. The lack of surviving primary sources, however, has meant much recourse to secondary material, which at times makes the text a little hard to follow. The work carries a well chosen selection of illustrations.

DAVID PHILLIPS

DENNIS HARDY, *Alternative Communities in Nineteenth Century England*. Longman. 1979. 268 pp. Illus. Paperback £5.95.

Dennis Hardy, Principal Lecturer in Social Science at Middlesex Polytechnic, has produced in this book a useful and balanced survey of the various kinds of 'alternative communities' — planned and experimental settlements — which formed an unusual and little-known feature of the nineteenth-century countryside. He classifies the communities into those marked by utopian socialism (such as the Owen-inspired Harmony Hall), those arising from ideas of agrarian socialism (for example, the Chartist settlements), sectarian communities (such as the New Forest Shakers), and anarchist ones (particularly those derived from the views of Kropotkin and Tolstoy). The book analyses the

philosophies, beliefs and motives which inspired the break from conventional society, and considers the reasons — poor choice of site, lack of funds, failure of leadership, internal dissensions — that caused so many to be shortlived. None of them was sufficiently large or influential as to make an indelible mark on contemporary life. A number of communities are selected by the author for detailed discussion, and his text is made the more vivid by the large number of original illustrations. Some of the settlements tried for agricultural self-sufficiency, and others established commercial smallholdings in the hope of finding outlets in urban markets. It is not the farming, however, but the attempt after attempt to find a new way of life — or return to an old one — which forms the intriguing thread of this volume.

G E MINGAY

MARYANNA S SMITH, *Chronological landmarks in American agriculture*. Agricultural Information Bulletin No 245, US Department of Agriculture, Washington. No date stated (c 1979). 103 pp.

This could be described as a new system of bibliography, possibly not scientific book recording, but a synoptic history in note form supported by the founding literature: a laborious but most informative system. May it be said that the production is more than a systematic notebook. It is that and more, each note supported by the relevant extract from the appropriate authority.

A specimen entry is:

1885. The driving of Texas cattle to railheads in Kansas came to an end. (Robert E. Dykstra. *The Cattle Towns*, New York, Alfred A. Knopf, 1968, 386 pp. illus., maps, notes, index.)

This is a very commendable work (the time occupied must have been very great), though it is not a connected historical narrative. It is, nevertheless, a substantial contribution to the story of the development of farming processes, crops and livestock, which has taken place in the vast areas of the United States from its first settlement by Europeans to the present day. It will not of course supersede the more orthodox historians, whose works are included in this bibliography, but it is a reference work of the most stimulating character.

G E FUSSELL

J S MOORE (ed), *Avon Local History Handbook*. Phillimore, Chichester. 1979. xi + 188 pp. Paperback £2.50.

This practical *Handbook* for local history research, methodology and sources, compiled by thirteen expert contributors, and published for the Avon Local History Association, is to be commended. Twelve carefully

edited chapters and an appendix (pp 1–101) are followed by a detailed Bibliography on books and articles (pp 102–42) and on primary sources (pp 143–75). The latter provides the addresses and opening hours of libraries, museums and record offices.

Despite its emphasis on the new administrative county of Avon, it deserves a wide readership. It provides a model which other counties or regions could usefully copy. Apart from an up-to-date exploration of the ends and means of local history, eleven themes are explored: the rural and urban landscape; population and the structure of local society; agriculture; trade, transport and communications; industry; housing and the standard of living; local administration and politics; church and chapel; education; leisure and recreation; and public opinion and popular beliefs. The text is admirably indexed, and as a 'stiff paperback' this *Handbook* is moderately priced.

J WHYMAN

DAVID C SMITH, *The First Century: A History of the University of Maine 1865–1965*. Univ of Maine, Orono, Maine. 1979. xv + 295 pp. Illus. \$15.

The University of Maine at Orono had well over 6000 students when it celebrated its centenary in 1965. In 1868, when it first opened its doors, it enrolled a mere four. First-year studies then included algebra, geometry, history, geography, natural philosophy, rhetoric, book-keeping, botany, and horticulture. In addition, the select bands of early students spent time in making bricks and digging drains for the new buildings on the campus. Agriculture and 'practical arts' played a key role from the start. Indeed, much of the university's early support came from those who advocated an emphasis on agricultural studies and research as a means of encouraging much-needed improvement in the state's farming and of checking its outward flow of migrants. It is not surprising, therefore, that the college farm was in operation before the college itself, and that the first farm superintendent was appointed alongside the first academic, the professor of mathematics (and at three-quarters of the latter's salary of \$1200).

Thereafter agricultural research and education continued to loom large in the activities of the campus, and there developed experimental farms and laboratories in which over the years significant advances have been achieved. Apart from this, a large part of the university's history has centred round a constant struggle carried on by a succession of able and devoted presidents to obtain adequate funds from a short-sighted and tight-fisted legislature. Sad to remark that this side of this fascinating and most interestingly illustrated volume has a depressing contemporary ring.

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The AGRICULTURAL HISTORY REVIEW



VOLUME 28 1980
PART II

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Alternate Husbandry and Permanent Pasture in the Midlands, 1650–1800

By JOHN BROAD

RECENT discussion of agriculture in the period 1500–1800 has been much influenced by Dr Kerridge's *Agricultural Revolution* which, in his own words, consisted of 'the floating of water-meadows, the substitution of up-and-down husbandry for permanent tillage and permanent grass or for shifting cultivation, the introduction of new fallow crops and selected grasses, marsh drainage, manuring, and stock breeding'.¹ The importance of these changes has been generally accepted by his critics, but they have stressed the slow diffusion of these techniques and have doubted the quantitative effect on the economy before the eighteenth century at the very least. This paper examines 'the backbone of the agricultural revolution', 'up-and-down husbandry' (otherwise known as alternate husbandry or ley farming), in the midlands, where Dr Kerridge found its introduction 'revolutionary'.² It argues that while up until about 1650 Dr Kerridge is probably right in stressing the role of up-and-down husbandry, economic considerations and technical changes and difficulties after that date tended to encourage the development of a new brand of permanent pasture farming in many parts of the southern and eastern midlands at the expense of convertible systems.

I

The use of leys and alternate husbandry was part of the process by which a higher proportion of land was used to support increasing numbers of livestock in many parts

of England. By alternating arable and pasture on a given piece of land farmers almost eliminated the need for fallows between their grain crops and were able to control the quality of their pasture by sowing grass seeds. Such systems have a faultless intellectual pedigree: historically they were consistently advocated by agricultural writers from Fitzherbert onwards, and have been shown by Slicher van Bath to have played an important part in agricultural improvements on the North German Plain and in the Netherlands; agriculturally they have been extolled by twentieth-century soil scientists as the best way to keep high fertility on both arable and pasture and to retain excellent soil texture and composition.³

In sixteenth- and seventeenth-century England there is plentiful evidence that despite rising grain prices and land hunger, new arable/grass rotations were introduced quite widely. Mr Havinden and Dr Thirsk have shown how portions of the open fields were turned over to temporary grass, making possible the rise in livestock numbers found in Oxfordshire and Lincolnshire farm inventories by the late seventeenth century.⁴ Dr Kerridge argues that a move towards mixed farming was also taking place on the old enclosed permanent pastures of the later middle ages, and on the increasing number of sixteenth- and seventeenth-century enclosures. This was particularly important in the midlands because there the rising sixteenth-century population caused economic

¹ E Kerridge, *The Agricultural Revolution*, 1967, p 40.

² *Ibid*, pp 39, 180. I would like to thank Dr Peter Brandon, Dr Carolina Lane and Dr Joan Thirsk for their comments and helpful suggestions on an earlier draft of this paper.

³ B H Slicher van Bath, *Agrarian History of Western Europe*, 1963, pp 249–54. R G Stapleton and W Davies, *Ley Farming*, 1948.

⁴ M Havinden, 'Agricultural Progress in Open-Field Oxfordshire', *Ag Hist Rev*, IX, 1961, pp 73–83. J Thirsk, *English Peasant Farming*, 1957, chs 4, 8, 13.

and social tensions. The density of settlements, lack of wastelands into which cultivation could expand (except in forest areas like Arden, Barnwood and the Leicestershire and Northamptonshire forests), and fifteenth-century enclosures for sheep all contributed to a situation in which governments had to regulate the tillage laws, send intermittent commissions to examine the enclosure problem, and, on occasion, deal with popular disturbances. The introduction of up-and-down husbandry, Dr Kerridge suggests, helped solve the problems of the midlands by providing a measured pasture and arable rotation which not only produced the same amount of grain on a much reduced area, but broke the agrarian cycle of diminished returns by allowing more sheep and cattle to be kept, animals whose dung maintained the fertility of the arable. Long leys of perhaps seven to twelve years were particularly relevant to the midlands where, within considerable soil variations, there are large areas of heavy clays whose suitability for arable or pasture is fairly equal, and whose natural productivity is not particularly high.

Dr Kerridge's arguments assume that this process gathered momentum in the sixteenth and early seventeenth centuries and was completed by the eighteenth. However, his interpretation lacks an economic dimension. As far as the midlands are concerned, there are good arguments for the spread of alternate husbandry on the kinds of lands indicated by Dr Kerridge up until about 1650. The slow transition from a mainly open-field, semi-subsistence farming in which market influences were largely local, to a market economy whose prices were dictated by the needs of urban populations, was not a painless process. The simultaneous pressures of a growing rural population on the scarce land resources of the midland plain, and the desire of landowners to rationalize land use by enclosure and by installing farmers who produced for the market and would pay higher rent for large farms, both affected farming systems. Population was a major

factor in forcing up agricultural prices, and although the basic grains rose most, demand for livestock rose only slightly less rapidly.⁵ Market forces certainly shook up the late fifteenth- and early sixteenth-century tendency to farm large sheep runs for wool, whose relative price was falling. Cattle fattening, dairying, and mutton rearing began to have a more important part to play, and required different management techniques, and sometimes smaller farming units. These needs account for much of the disparking of the seventeenth century. At the same time farmers were unwilling to over-specialize in livestock. Grain prices were generally relatively high and fluctuated substantially as grain production rose only slowly to accommodate the increasing population, and marketing inefficiencies were slow to disappear. The risk of local grain shortages, the cheapness of labour, and the higher yields claimed for both arable and livestock under the system, all favoured a relatively intensive mixed farming. In addition the gradual transition from open-field farming favoured mixed systems, for the skills necessary to manage permanent grassland systems were only slowly acquired.

What is worth examining more closely is the extent to which the 'progress' which had been made by 1650 was actually maintained in the succeeding 150 years. Dr Kerridge himself explains the difficulties of identifying alternate husbandry from the variety of mainly legal documents that constitute his major source. Legal jargon had no word to describe alternate husbandry, so the existence of temporary or permanent fences in old enclosures, crops listed in enclosed fields, and the existence of covenants against ploughing in leases are all used by him as evidence of up-and-down land.⁶ Now while it is possible to show cases where they indicate exactly that, such detective methods are not foolproof, and in many cases the evidence he seeks might

⁵ J. Thirsk (ed), *The Agrarian History of England and Wales*, IV, Cambridge, 1967, pp 602-3.

⁶ Kerridge, *op cit*, pp 181-91.

also be found where alternate husbandry was not practised (for instance great sheep enclosures later divided into more practicable smaller fields), or indeed where it was no longer practised. One also wonders whether in discovering ploughed-up pasture land Dr Kerridge has necessarily found alternate husbandry, which needs to be applied as a system of careful management to bring about the kind of agricultural improvement that is claimed for it.

The problems of identifying alternate husbandry in the absence of very full farm accounts are daunting, yet there is good evidence to suggest that by about 1800 large areas of the southern and eastern midlands, particularly Leicestershire, Warwickshire, Northamptonshire, Rutland, Buckinghamshire, and Bedfordshire, had evolved a system of specialized livestock farming on improved permanent pasture in preference to alternate husbandry. The evidence is of two kinds. Firstly, thorough knowledge of local circumstances may make it possible to demonstrate a shift from alternate husbandry to permanent pasture. In Buckinghamshire two examples can be given: the parish of Middle Claydon (quoted three times by Dr Kerridge, using evidence from the 1650s) included a measure of up-and-down land at that time, yet after 1655, at the latest, the precise fields that he cited were put down to permanent grass and remained as such for the next sixty years, and probably for the next 140 at least;⁷ Creslow, which Dr Kerridge found under an up-and-down system in 1607, was being run as a grazing farm in the 1660s, and in 1813 John Westcar was quoted as ploughing 60 or 70 acres 'under no system but that of being subservient to the pasturage'. In Northamptonshire Mr Christopher Taylor has found archaeological evidence of ploughing during the sixteenth and seventeenth centuries at six deserted village

sites. The ploughing was shortlived and may amount to as little as a single year's cultivation. Literary evidence for a number of the sites suggests that they were in permanent pasture before 1547, and have probably remained so since at least 1700.⁸ Microscopic work at parish level could undoubtedly provide more examples.

Secondly, the agricultural reports and crop returns of the period around 1800, despite their deficiencies, provide good evidence of the extent of permanent grass farming and give some estimate of the importance of such husbandry to the southern midlands. Instances of parishes like Pitchcott (Bucks) and Fawsley (Northants) 'without a single blade of corn, being wholly on grass and applied to feeding' stand at the extreme end of the spectrum.⁹ Examples of wholly pasture farms for both dairying and fattening are also given in Northamptonshire by Donaldson, and these were common in Buckinghamshire parishes such as Hogshaw, Middle Claydon, Quarrendon, Hardwick with Weedon, and Fleet Marston in the late seventeenth and early eighteenth centuries.¹⁰ Looking at the midland counties as a whole, several reporters made estimates which specify the percentages of permanent grass and convertible husbandry land around 1800. For Leicestershire, Pitt in 1809 reckoned that of 480,000 acres in full agricultural use, exactly half were in 'occasional' tillage and the other half in 'permanent grass'. Of the 240,000 acres of occasional tillage, 85,000 acres were in

⁸ Kerridge, *op cit*, pp 183, 186; Glyn Mills and Co, Edward Backwell's Ledgers: Creslow accounts; St John Priest, *General View of . . . Buckingham*, 1813, p 52. I would like to thank Mr Taylor for giving me details of his finds which will be published in the forthcoming inventories of the Royal Commission on Historical Monuments for Northamptonshire. The sites involved are Onley in Barby, Glasthorpe in Flore, Upper Catesby, Sulby, and Kirby in Woodend. Preston Deanery in Hockleton Parish shows similar ploughing.

⁹ PRO: HO 67/15; W Pitt, *General View of . . . Northampton*, 1809, p 131.

¹⁰ J Donaldson, *General View of . . . Northampton*, 1794, p 25; Claydon House, Verney deeds, esp 1650s; Oxfordshire CRO: Dillon MSS, x/g/3-12, x/i/4-6, 10-12, xii/h/2-6.

⁷ *Ibid*, pp 192, 194, 199, 207; for the later history see J P F Broad, *Sir Ralph Verney and his Estates, 1630-96*, unpublished Oxford University DPhil thesis, 1973.

artificial grasses, part of a total of 170,000 acres in what are best described as fodder crops (beans and peas, oats, etc).¹¹ Prof Hoskins would go even further on the basis of the 1801 Crop Returns and suggests that Pitt overestimated the arable.¹² In Rutland Crutchley reckoned three-fifths permanent grass, two-fifths convertible land, though Parkinson's slightly later sums suggest just over 50 per cent arable.¹³ Wedge in Warwickshire computed some 154,530 acres of tillage (equating arable with up-and-down land and including 57,330 acres of seed grass), compared with 150,000 acres of pasture and feeding grounds, and 82,000 acres of meadow.¹⁴ A rather similar position emerges in Northamptonshire, where, although no acreages are given, Donaldson seems to suggest that some 100 or more of the 227 enclosed parishes were laid down to grass.¹⁵ Such figures are mainly impressionistic, but it is unlikely that they totally misrepresent the picture of agricultural life in the midlands by the end of the eighteenth century as one in which there was a great deal of permanent pasture, as well as areas of convertible husbandry, and remaining but fast diminishing open-field systems.

The Board of Agriculture Reports also help to show how soil and market conditions, amongst other factors, tended to subdivide the midlands plain into a number of farming regions, some of which favoured permanent pasture, others convertible husbandry.¹⁶ St John Priest described Buckinghamshire as follows: 'one third consists of dairy farms, of which the proportion [of ploughed land to pasture] is as one to sixteen; and one sixth consists of farms of a mixed nature, having a proportion of arable to pasture of five to

three'.¹⁷ Examination of the 1801 Crop Returns, and of Parkinson's 1808 parish estimates (which in the majority of cases square pretty well), suggest that though mixed and pasture farms are to be found in all parts of the Vale region, pasture parishes are concentrated more to the north-west, and mixed parishes in the more densely populated north-east, particularly on the sandier soils around Leighton Buzzard and the Brickhills.¹⁸

To the north, in Northamptonshire, there are similar distinctions. On the north-east Buckinghamshire border, parishes like Cosgrave, where John Franklin was fattening cattle on up-and-down land in the 1670s, seem to have been following the same kind of agriculture as the Tyrells in adjoining Castlethorpe (Bucks), though dairying seems to have been the major occupation by the late eighteenth century.¹⁹ Pitt contrasts the black and dark soils, which were mainly laid down to grass when enclosed, with the red soils, which tended to become mixed farming land.²⁰ Certainly dairying appeared to predominate in the west and south-west of the county, adjoining Buckinghamshire and Warwickshire, towards Banbury and Daventry.²¹ Warwickshire again had its contrasts, with permanent pasture playing a prominent part in the south-east of the county, below the Fosse Way, and also along the Leicestershire border.²² Rather different was the band of 'fine dry red loam' mixed with clays extending north from Stratford-upon-Avon to Warwick, Coventry and north-west to Birmingham. This was up-and-down land, while the forest of Arden was 'mostly in tillage and a much smaller

¹¹ W Pitt, *General View of . . . Leicester*, 1809, pp 5, 96.

¹² W G Hoskins, in his (ed), *Studies in Leicestershire Agrarian History*, Leicester, 1949, pp 140-1.

¹³ J Crutchley, *General View of . . . Rutland*, 1794, p 12; R Parkinson, *General View of . . . Rutland*, 1808, p 1.

¹⁴ J Wedge, *General View of . . . Warwick*, 1794, pp 11, 50.

¹⁵ Donaldson, *op cit*, p 24.

¹⁶ Kerridge, *op cit*, frontispiece, makes no divisions; Thirsk (ed), *op cit*, makes quite a number for the period 1500-1640.

¹⁷ St John Priest, *General View of . . . Buckingham*, 1813, p 5.

This means that the northern 'Vale' half of the county was in his estimate two-thirds dairy and one-third mixed, since half the county was Chiltern arable.

¹⁸ *Ibid*, pp 367-72; PRO: HO 67/15, printed by M E Turner, *Records of Bucks.*, XIX, 1974, pp 471-82.

¹⁹ T B Franklin, *British Grasslands*, 1953, p 90; PRO: C 108/373; Pitt, *op cit*, p 199.

²⁰ *Ibid*, p 131.

²¹ Donaldson, *op cit*, p 50.

²² Wedge, *op cit*, pp 8, 20, 50.

proportion of sheep are kept . . . partly from the nature of the soil, and partly from the neglect of the occupiers in not draining'.²³ In the period before 1700 Dr Kerridge has taken all his instances of up-and-down land in Warwickshire from this area, and his findings about the change in the forest of Arden from pasture farming to mixed arable have been confirmed by V H T Skipp.²⁴ Finally, in Leicestershire the same distinctions of area apply. The north-eastern vale of Belvoir saw a classic inversion of the old pattern of vale arable and hill pasture ideal for convertible husbandry, but, in Pitt's words, 'in the south, east and middle of the county are many instances of farms and occupations without any tillage lands whatsoever'.²⁵ The pasture lands of the Welland valley were particularly famous, and the predominance of pasture there is confirmed by the 1801 Crop Returns.²⁶

II

The evidence of the various County Reports suggests that something like one-half of the area involved was laid down to permanent pasture by the end of the eighteenth century. This included land in both old and new enclosures. The remainder of this paper examines the reasons for this swing away from alternate husbandry and the merits and deficiencies of the permanent grass economy that succeeded it. These reasons were partly economic, and partly technical.

The economic changes affecting agriculture after 1650 were soon evident. Population pressure generally slackened and most additional agricultural demand was provided by expanding urban centres, particularly London. Grain prices stabilized and then fell,

but the livestock sector, particularly dairy produce, held up much better in the period 1660–1760.²⁷ More important, this was the period when the light-land mixed farming systems, using previously uncultivated hillside pasture for grain production, and alternating grain with turnips and artificial grasses such as sainfoin, lucerne and clover, sustained a higher concentration of livestock, whose manure increased grain yields and general productivity per acre. Prof E L Jones has suggested that English grain prices fell less than those of her continental neighbours because, in a period of slackening demand, the production gains on the light soils were offset by a shift from arable to pasture on the heavy lands of the midlands.²⁸ Prof Jones does not elucidate the form of pasture farming in the midlands, and his thesis does not openly conflict with Dr Kerridge's on this point, since leys on the midlands clays were long, and therefore took up a high percentage of the land area, while additional pasture came into use as a result of the open field improvements.

However, one can contrast light- and heavy-soil farmers in a rather different way. On the one hand, the light-soil farmers intensified their agriculture, putting in capital and labour to increase grain output and the numbers of livestock (for both their dung and produce), and thereby maintained farm incomes. In this they were making themselves real mixed farmers with equal profit and emphasis on both types of produce. Midland clayland farmers could not follow suit: their heavy lands required much greater inputs, and could not grow so successfully the new crops that were a vital feature of light-land systems. Instead, they did two interconnected things: they specialized production quite markedly (all the late eighteenth-century writers make it clear that dairying and fattening never mixed, and the differentiation can already be

²³ Ibid, p 8.

²⁴ Kerridge, op cit, ch 3: Rowington, Knowle, Hampton-in-Arden, Kenilworth, Lillington, Great Alne, Great Packington, Brandon. V H T Skipp, 'Economic and Social Change in the Forest of Arden', in J Thirsk (ed), *Land Church and People*, 1970, pp 84–111.

²⁵ Pitt, *Leicester*, pp 14, 87.

²⁶ W G Hoskins, 'The Leicestershire Crop Returns of 1801', in his (ed) *Studies in Leicestershire Agrarian History*, Leicester, 1949, pp 127–53.

²⁷ A H John, 'The Course of Agricultural Change', in L S Pressnell (ed), *Studies in the Industrial Revolution*, 1960, p 151.

²⁸ E L Jones, *Agriculture and Economic Growth in England 1650–1815*, 1967, pp 152–71.

seen on Middle Claydon farms in the later seventeenth century), and, like their nineteenth-century equivalents in adversity, they went in for low-intensity, cost-cutting agriculture. Sustained convertible husbandry did not really fit in, as it required regular labour on the arable as well as investment in equipment and horses. The kinds of farm buildings for arable and pasture were different, even if the simplicity of construction in the later seventeenth and eighteenth centuries meant that this was not an insoluble problem. Investment in livestock, too, was an expensive business and the profitability of a farm depended crucially on getting the balance between overstocking and understocking the land just right. Lands with a high proportion of permanent pasture presented at once a cheap form of farming, in which less investment was required than on the light lands, and a specialization in the most profitable agricultural sectors: meat and dairy produce.

Not only were there good economic reasons pushing farmers towards permanent grassland systems, but their landlords also stood to gain from the process. Rents between 1660 and 1750 were generally stagnant and experienced periods of depression from the mid-1660s to the 1690s, and again from 1730 to 1750.²⁹ Stagnant and declining rentals encouraged landlords to enclose, since, as Prof McCloskey has shown, enclosure could increase rents by up to 100 per cent, with a common figure of 40–60 per cent, even where there was no change in husbandry.³⁰ However, landlords also benefited further by any conversion from arable to pasture since, as Ellis notes, pasture rents were considerably higher:

most Arable ground in this Vale lets but for seven or eight Shillings an Acre, and the best of all, for but nine

Shillings. Whereas, when such Plowed-land is got into a right full Sward, it will let for twenty or thirty Shillings an Acre.³¹

In addition, a landowner with land left unlet, gained grazing for his horses and could, with relatively low labour costs, easily keep a few cows for a home dairy.³²

Moreover, the late seventeenth and early eighteenth centuries were a time when an increasing proportion of the nation's land area was owned by the greater landowners, and the southern midlands were particularly well populated with country seats and feudal acres.³³ Consolidated estates were not at all uncommon: the Spencers owned major parts of a block of twenty-four parishes spanning the Warwickshire/Northamptonshire borders, but more common were families owning large parts of one or two parishes, in whose interest it was gradually to engross farms and install wealthy tenant farmers.³⁴ In north Buckinghamshire such consolidated estates became very important by the end of the eighteenth century, particularly in the north-western Ashendon hundred, where pasture parishes were more common.³⁵ The 1798 Land Tax Returns show that of thirty-seven parishes, only nine had dispersed land-ownership in which no-one owned more than one-third of the land by value, while in twenty parishes a single owner held more than two-thirds, and in thirteen of these more than 90 per cent³⁶ (see Table 1). In parishes of concentrated ownership at a time of stagnant or falling rent, it was therefore not surprising that landowners ensured that open fields were

³¹ W Ellis, *The Modern Husbandman*, 1750, I, Feb, p 112, almost certainly referring to the Vale of Aylesbury.

³² *Ibid*, p 111; Ellis also quotes a Warwickshire farmer who had 'laid down a good deal of it within these few years; for Plowing has paid but ill these last years, and Grazing not much better', *ibid*, VII, July, p 75.

³³ F M L Thompson, 'The Social Distribution of Landed Property in England since the sixteenth century', *Econ Hist Rev*, 2nd ser, XIX, 1966, pp 505–17.

³⁴ H Thorpe, 'Lord and Landscape', in D R Mills (ed), *English Rural Communities*, 1973, pp 31–82.

³⁵ Buckinghamshire CRO: Land Tax Returns, 1798, series Q/RPL.

³⁶ M W Beresford, *The Lost Villages of England*, 1954, p 237.

²⁹ See M G Davies, 'Country Gentry and Falling Rents in the 1660s and 1670s', *Midland History*, IV, 1977, pp 86–96, and G E Mingay, 'The Agricultural Depression', *Econ Hist Rev*, 2nd ser, VIII, 1956, pp 323–38.

³⁰ D McCloskey, 'The Economics of Enclosure', in W N Parker and E L Jones (eds), *European Peasants and their Markets*, Princeton, 1975, pp 155–60.

TABLE 1
Concentration of Buckinghamshire landownership
in northern hundreds from 1798 Land Tax returns

Hundred	Number of parishes	No owners over $\frac{1}{3}$ tax	1 or 2 owners $\frac{1}{3}$ to $\frac{2}{3}$ tax	1 or 2 owners over $\frac{2}{3}$ tax	1 owner over 90% tax
Ashendon	37	9(24.3%)	7(18.9%)	21(56.75%)	13(35.1%)
Buckingham	29	10(34.5%)	4(13.8%)	15(51.7%)	2(6.9%)
Cottesloe	34	13(38.2%)	10(29.4%)	11(32.3%)	3(8.8%)
Newport	53	21(39.6%)	6(11.3%)	26(49.1%)	13(24.5%)

put down to grass. When the Verneys enclosed Middle Claydon in 1654–56 and East Claydon in the 1740s, the whole parish became grassland. In the latter case, two neighbouring parishes were being seeded down at the same time, and grass seed became a scarce and expensive commodity locally. When considering buying a new estate in Buckinghamshire the Verneys showed a positive bias towards pasture farming in the 1740s: 'Do you think the estate [Water Stratford, Bucks.] . . . might be turned into Dairy bargains and hold rent, and all, or all but a trifle laid down, for surely if near half is ploughed or but one fourth of it, it must needs have many barns and outbuildings to it which are great incumbrances, as we see by Adstock and Bierton.'³⁷

In Northamptonshire at the end of the eighteenth century, Donaldson made an interesting comment which reinforces the idea that early and mid-eighteenth-century enclosures were often of the cost-cutting variety, when he compared such enclosures with the 'new enclosed townships or parishes' where 'a system of alternate corn and grass husbandry is adopted; a certain portion of meadows generally allotted to each farm where it is practicable, and some farms are kept in constant pasturage'.³⁸ His

successor, Pitt, made the comparison between old and late eighteenth-century enclosure more explicit when he wrote how farms with part permanent grass and part convertible land were 'much more to be commended than that of pasture only, as yielding a greater gross product, employing more hands in cultivation, and tending to support a larger population'.³⁹ A more labour-intensive system of management was a more economic proposition with buoyant grain and livestock prices in the latter part of the century.

The technical problems of mixed farming systems on the midland plain are mainly concerned with the quality and heaviness of the soil. Badly-drained clays were extremely cumbersome to work and slow and expensive to plough. Though with careful attention they could produce high yields, they could not adopt the light soil systems being introduced in the late seventeenth century since turnips tended to rot, were hard to raise in winter, and could not be fed in the field. The new grasses, particularly sainfoin, did not grow nearly as successfully on heavy soils.

Another less obvious problem was the difficulty of raising a good grass crop after the old pasture had been ploughed up. Agricultural writers on the whole encouraged convertible systems, doubtless influenced by their success on light lands, but Hale, for instance, advocated caution and forethought before laying down old arable or ploughing

³⁷ Claydon House, Verney MSS microfilm, reel 58, esp 1741–42; Verney estate papers, bundle N4/2/3, Lord Fermanagh to John Millward, 27 January 1742/43.

³⁸ Donaldson, *op cit*, p 27.

³⁹ Pitt, *Northampton*, p 130.

up good pasture.⁴⁰ One suspects that this was because it was easy to ruin the ground by wrong treatment. Certainly Crutchley, reporting on Rutland at the end of the eighteenth century (in what Marshall considered the best of the agricultural reports), found that the techniques for ploughing up grasslands were very little understood, and concluded that four-fifths of grassland clay farms had been actually harmed by ploughing up.⁴¹ Pitt came away with a similar impression of the old pastures of Leicestershire, that if they were ploughed up it would take them forty years to return to the same quality of grass. In neighbouring Northamptonshire the same author quoted an instance of a gentleman-farmer who preferred to take on somewhat run-down pastures for seven years, rather than accept a lease in which he would plough and improve them for four years with turnips and coleseed.⁴²

Such attitudes are also exhibited on the Verney estates in north Buckinghamshire in the later seventeenth century. Although Sir Ralph Verney was conversant with the new farming ideas, as is shown by his experiments with crops and manures, the ploughing up of good pastures such as Knowl Hill was always used as a threat when he was desperate for a tenant. In practice he would always 'rather let it to a good tenant than plough it', and took such farms in hand as dairy or feeding grounds when no tenant could be found.⁴³ He did not allow his pastures to be ploughed up between 1650 and 1696, and this policy was continued by his eighteenth-century successors. On such estates the £5 an acre penalty for ploughing up pasture was undoubtedly intended as a deterrent. Other examples of hesitation in ploughing up pasture are to be found on the Cave family estates in Leicestershire, and at Wasperton in Warwickshire, which was enclosed in 1664

and the land laid down to pasture for at least thirty years.⁴⁴

Even where much of the land was permanent pasture, this did not preclude farmers from keeping a small percentage of land under arable crops, often quite separately. All six Buckinghamshire probate inventories of men who called themselves graziers or dairymen during the eighteenth century show some arable crops, but never an important proportion.⁴⁵ The logic of Dr Kerridge's arguments, that the growing of small acreages of arable crops was part of a system of ley husbandry in which the smaller the proportion of arable the longer the ley, is never made explicit and was not always the case. The late eighteenth-century agricultural reports suggest otherwise: speaking of Rutland enclosures in the 1760s Crutchley writes 'the farmers at that time laid a considerable part to grass and the remainder was kept in the same course, and nearly in every respect the like management as in the open field state', and 'grasslands meant to be improved by ploughing for a few years by drainage, and now and then a small piece of land near the graziers' house for the convenience of straw, being the only strong land that is in tillage'.⁴⁶ In Northamptonshire Donaldson found half the enclosed parishes were 'old enclosures', and these were occupied by grazing farms.⁴⁷ In general well-tended permanent pastures may have given a more consistent return than long leys, and arable and pasture in many cases remained separate and uncoordinated.

III

By the end of the eighteenth century permanent pasture farming had an important

⁴⁰ T Hale, *A Complete Body of Husbandry*, 1756, p. 10.

⁴¹ Crutchley, op cit, p 13.

⁴² Pitt, *Leicester*, p 157; and his *Northampton*, pp 138-9.

⁴³ Broad, *thesis*, pp 218-19; Verney MSS, Estate papers, Sir Ralph Verney to William Coleman, 22 December 1686.

⁴⁴ Claydon House, Verney MSS, Ralph Verney to Earl Verney, 18 October 1744, microfilm reel 59; M Cave to Ralph Verney, 27 November 1725, microfilm reel 57. D M Barratt, 'The Enclosure of the Manor of Wasperton', *Univ Birmingham Hist Jour*, III, 1951-52, 146-52.

⁴⁵ Buckinghamshire CRO: D/A/Wf/71/159; 73/225; 75/137; 75/146; 78/74; 78/94.

⁴⁶ Crutchley, op cit, pp 10, 31.

⁴⁷ Donaldson, op cit, p 24.

part to play in the agricultural economy of the southern and eastern midlands. Yet both Arthur Young (devoted to arable-based systems of management) and William Marshall (who in attacking Young expressed an equal commitment to mixed farming) condemned permanent pasture farming as a poor and regressive system of management. What they appear to refer to was unmanaged pasture, and in this case their criticisms have been substantiated by the Rothamsted grass plot experiments, which show a rapid decline in hay yields to a stable low level over 120 years and worsening grass quality for this kind of land.⁴⁸ Such management would certainly be worse than almost any alternate grass/arable rotation. Yet because Young and Marshall were preoccupied with their own interests, and many of the County Reporters were unfamiliar with the farming of the areas they surveyed, they all probably underplayed changes in the management of permanent pasture.

There were important ways in which grassland farmers could improve their pasture and replenish fertility without recourse to the plough. One was the direct application of soil nutrients to pastures. The use of fertilizers was a constant theme of seventeenth- and eighteenth-century agricultural writers, yet modern historians of the period have generally tended to emphasize their use on arable land.⁴⁹ In practice, the fertilizers advocated for pasture included dung, urban night soil, river mud, marl, lime, and potash.⁵⁰ Certainly the Rothamsted experiments

indicate that the application of farmyard manure to grassland has the effect of raising hay yields markedly compared with unmanured plots, and of holding them at a reasonably stable level.⁵¹ Moreover, farmyard manure encourages early growth more effectively than artificial manures. After regular four-yearly application over ninety years the yield of manured plots (plot 19) was more than double that of its unmanured counterparts (plots, 2, 3, 12).⁵²

How regularly and effectively farmers made such applications is difficult to determine in the absence of large numbers of detailed farm records of the period. Yet on the Verney estates in north Buckinghamshire, regular application of fertilizer is evident from the 1680s onwards. The particularly favoured source was potash provided by soap boilers, and grants of considerable quantities are a regular feature of negotiations for new leases and tenancies from then onwards. So important did they become that Sir Ralph Verney and his son made a point of keeping at least one potash maker as a tenant. He was the only man given a long lease, and it included clauses specifying the provision of considerable amounts of potash every year and an option to buy his whole supply.⁵³ Literary references to the application of fertilizers to pastures abound: the use of Somerset marl to prolong the life of clover leys, the marvels of Thomas Liveing's new manure, and of mud from streams.⁵⁴ Certainly areas within reach of growing urban centres were able to make good use of waste products from home and industry. Wedge remarked on the benefits of Birmingham to Warwickshire farmers, while Middlesex farmers were renowned for their

⁴⁸ W E Brenchley, *The Manuring of Grassland for Hay*, 1924; *The Park Grass Plots at Rothamsted* (rev K Warington), 1958; *Details of the Classical and Long Term Experiments up to 1967*, 1970. I am grateful to Dr Carolina Lane for drawing my attention to these important experiments. Plots 2, 3 and 12 are unmanured.

⁴⁹ One notable exception is J de Vries, *The Dutch Rural Economy in the Golden Age*, 1974, p 142.

⁵⁰ Ellis, op cit, I, Jan, pp 38, 84; III, July, pp 132-3; VI, June, p 32; VII, July, p 106; S Trowell, *A New Treatise of Husbandry, Gardening, etc.*, 1739, pp 42, 146-7; R North, *An Account of the different Kinds of Grasses Propagated in England . . .*, 1759, pp 2, 14, 23-33; Hale, op cit, pp 10, 85-9, 415, 422.

⁵¹ Brenchley, op cit, p 82.

⁵² W E Brenchley, *The Park Grass Plots at Rothamsted* (rev K Warington), 1958, Table 1, comparing plots 2, 3 and 12 (unmanured) with plot 19 (farmyard manure every fourth year since 1904), and pp 8, 81-5.

⁵³ Claydon House, Verney deeds, 1671, dated 19 November 1671; estate papers 1706, Potash agreement between William Stevens and Lord Fermanagh dated 1720.

⁵⁴ R North, *An Account of the different Kinds of Grasses . . .*, 1759, pp 4-5; Hale, op cit, p 10; Trowell, op cit, p 42.

heavy use of dung on pastures, and in the mid-eighteenth century it was considered profitable to cart fertilizers such as coal ashes as far as thirty miles from London.⁵⁵ Such applications of manure were considered important on pasture lying away from rivers where floods could naturally lay down rich silt.⁵⁶ The cost of fertilizer brought from off the farm was mainly determined by transport costs and was therefore a function of distance. Ellis's limit of thirty miles may be reasonable, although already in the late seventeenth century cartloads were reaching north Buckinghamshire from London — a distance of more than fifty miles.⁵⁷ Transport costs fell with the arrival of canals, and by 1813 Priest noted that the Grand Junction was already being used to shift manure out to agricultural Buckinghamshire.⁵⁸ In addition, rural industries, particularly soap-boiling and the leather trades, provided a constant source closer to hand.

The fertility of permanent grasslands could also be maintained by other methods. In the sixteenth and seventeenth centuries it was normal to make a clear distinction between meadows, where the land was left ungrazed from January or February until a hay crop was cut, and pasture ground which was continuously fed. In the eighteenth century, if not before, this distinction was becoming blurred as more grassland was rotated between meadow and pasture. The idea of an 'upland meadow', land away from enriching river floods that could be profitably mowed, was discussed by most of the eighteenth-century agricultural writers who understood grassland farming. Hales felt that the meadow/pasture distinction was a poor one because 'both these are by the judicious Farmer mowed at times and fed at times', and

he preferred the description 'grass ground'.⁵⁹ North saw rotational mowing as a significant improvement and argued that 'Upland Meadows require manuring more than Pasture and it is much better for the Land, when it can be alternately Meadow and Pasture'.⁶⁰ Both Hales and Robert Brown advocated mowing grounds one year in three, Brown arguing that 'mowing of land too often is a very great prejudice to it' unless the land is frequently manured, a sentiment echoing Hales's statement that a hay crop can take the heart out of the ground just like corn.⁶¹ In Buckinghamshire Priest found grassland being mown in alternate years, as well as other farms where meadows and pastures were still kept separate.⁶² In the mid-eighteenth century at Middle Claydon, Ralph Verney wrote 'we generally compute one third for mowing ground, for unless the tenant can keep up a stock in winter he can't pay his rent and to buy hay ruins him'. Ninety years earlier Verney leases contained clauses of two types, some enjoining mowing one year in three, others applying mowing restrictions only to specific fields.⁶³

Rotational mowing could thus help to maintain fertility by varying the way in which the grass responded. The untreated grass plots at Rothamsted not only suffered considerable reductions in yields, but also showed a gradual reduction of the number of species of grass.⁶⁴ Yet they represent land that was mowed every year and was not even grazed after the haycut. Even where no manure is applied to pasture, the natural application by

⁵⁹ Hale, *op cit*, p 414.

⁶⁰ North, *op cit*, pp 5, 14; One example in practice in House of Lords RO: HL Committee book, vol 16, 12 February 1765.

⁶¹ Hale, *op cit*, p 427; R Brown, *The Complete Farmer* . . ., 1759, p 108.

⁶² St John Priest, *op cit*, p 234.

⁶³ Claydon House, Verney MSS, Ralph Verney to Earl Verney, 21 Oct 1744, microfilm reel 59; Verney deeds, 1656 (19 Jan 1656/57); 1658 (17 Nov 1658); estate papers, William Coleman to Sir Ralph Verney, 14 April 1689.

⁶⁴ Brenchley, *The Park Grass Plots at Rothamsted* (rev K Warington), 1958, pp 18–20; such reductions were true of all plots but the types of plant involved varied widely with the manure applied.

⁵⁵ Wedge, *op cit*, p 20; Ellis, *op cit*, I, Jan, pp 38, 84; III, July, pp 132–5; VII, July, p 106.

⁵⁶ Hale, *op cit*, p 415; North, *op cit*, p 14; Pitt, *Northampton*, p 133.

⁵⁷ Claydon House, Verney MSS, Estate papers, 1680–96; PRO: C 108/98, Wingfield-Drake papers.

⁵⁸ St John Priest, *op cit*, pp 272, 343.

feeding cattle puts some fertility back into the soil. Not that it should be imagined that eighteenth-century yields were high: Marshall speaks of yields of one ton per acre as good, and this compares poorly with the two and a half to three ton crops attained with some fertilizers at Rothamsted.⁶⁵ Nevertheless the combination of manuring grasslands and rotating meadows provided a way in which pasture farming on the midland clays could be improved independently of the new light land systems, albeit at a lower level of intensity.

Such methods reduced the problem of falling soil fertility, but there were other disadvantages associated with the physical condition of the land when pasture was not ploughed up every few years. One was the growth of very large ant-hills in the fields. Grass tended not to grow on such uneven lumps and the general state of the pasture deteriorated. The traditional method of removing such ant-hills was with a long, narrow, iron-tipped spade, but by the mid-eighteenth century a special plough had been developed for the purpose.⁶⁶ When the agricultural reports were written around 1800 the technique was noted and remarked in Buckinghamshire, Northamptonshire, Leicestershire, and Rutland.⁶⁷ Moreover, it provided a method of re-seeding old pasture with either traditional hay seeds or with new grasses, without actually ploughing up the whole field. No great claims are made for 'banking' (as it was called) as a dramatic reviver of decayed pastures, but it could prevent the worst depredations of time and allow the inoculation of grass species that had disappeared.

Another problem faced by pasture farmers on the heavy clay soils of the midlands was that of water. Winter rainfall could reduce pasture to quagmires and destroy the grass if livestock were allowed to roam. Many leases

prevented farmers from running cattle on wet fields in the early months of the year. Drainage was therefore essential, and deep drains were sunk through the clay and filled with branches and bracken. One of the greatest problems when laying down open fields to pasture was the persistence of mounded ridges and furrows, unless care was taken to level them.⁶⁸ In summer the problem was reversed. The increasing numbers of 'upland' pastures were less likely to have streams running through them for livestock to drink from, and farmers needed to dig ponds and employ drainage experts to divert streams so that they ran through the maximum number of fields.⁶⁹

IV

Whatever the success of new management techniques in stabilizing or even improving permanent pasture, an equal part in the survival of midland farming was played by the considerable degree of specialization reached by the end of the eighteenth century. Livestock farming was bound up with the expansion of a market economy and of facilities equipped to deal year round with the products of the farm. To compete with the light-land mixed farmers, with their turnip-, clover- and sainfoin-fed animals and the beginnings of stall-fed cattle, the midland livestock producer had to specialize, tailor his farming to the market, and aim for quality. Ellis, at his observation post between the light-land Chilterns and the clay Vale, was insistent that 'no artificial Grass can feed any beast so as to cause its Flesh to eat so sweet, as when it is fed on the natural Grass of Vale-Lands', and that Vale grass alone could fatten an ox or horse, whereas on the hills the farmers needed to supplement with grains.⁷⁰ In general, midland farmers had to be

⁶⁵ Ibid, Table 1.

⁶⁶ Ellis, op cit, I, Jan, p 37; VII, July, pp 38-42; Hale, op cit, p 418.

⁶⁷ St John Priest, op cit, pp 201, 203, 236; Pitt, *Northampton*, pp 136-9; *Leicester*, p 151; Crutchley, op cit, p 13.

⁶⁸ Claydon House, Verney estate papers, William Coleman to Sir Ralph Verney, 5 Feb 1676/7; Kerridge, op cit, p 37.

⁶⁹ Claydon House, Verney estate papers, Sir Ralph Verney to William Coleman, 21 July 1681, 22 Jan 1682/83, 16 Feb 1686/87, 15 Oct 1684.

⁷⁰ Ellis, op cit, I, March, p 80.

adaptable, and specialisms certainly changed: in the late seventeenth and early eighteenth centuries north-west Buckinghamshire specialized in cheese, one farmer in 1727 owning seventy-eight cows and holding almost two and a half tons of cheese in store; by the later part of the century the specialism had altered to double-skimmed butter for the London market. This trade was run almost exclusively by a few London dealers who organized transport and controlled prices, paying the farmers monthly, or in some cases yearly, for their produce.⁷¹ This butter area extended into the south-western part of Northamptonshire and the parishes around Whittlebury forest, of which Pitt remarked 'this country barely supplies itself with cheese, but has considerable surplus of butter and of pork fed from dairy produce', which 'have an easy conveyance, ready sale, and the returns from which quickly comes round'.⁷²

Specialization in cattle breeding was uncommon in the south midlands, and in most counties there was a vast mixture of breeds. Large numbers of cattle were bought in from the markets and fairs to the north of the area. Welsh and Hereford cattle were valued for fattening and the Holderness for dairying — partly because when milk yields fell off it could be sold off for fattening or to the metropolitan dairies.⁷³ Dairying naturally produced a surplus of calves, but on the whole these were not reared on the farm, and at least some found themselves bundled ten or twenty at a time into carts to be taken to Essex and there fattened for veal.⁷⁴ While butter-making replaced cheese as the main product in

Buckinghamshire and Northamptonshire, cheese-making was being ousted by fattening in Warwickshire.⁷⁵ Here doubtless the growth of an urban and industrial market in the west midlands had similar but less pronounced effects on agriculture to those exerted by London on Middlesex. In general, fattening was relatively specialized, found widely in all the counties of the south midlands, and often on 'old' enclosures with their larger farm sizes.⁷⁶ Cattle graziers mainly concentrated on summer-feeding spring-bought animals for sale in the autumn, or in the case of the best beasts, after Christmas.⁷⁷ Where the County Report writers differ on profitability they agree that the animals were almost exclusively grass- and hay-fed, with little outside feed bought in.⁷⁸

The specialisms within cattle farming have been used as an example of the way in which districts concentrated on products best suited to their land and markets, and changed these as tastes and price relativities altered. Midland farmers also adapted in other ways: sheep were as important as cattle and were often kept with them, while wherever cheese and butter making were predominant pigs were reared and fattened on the waste-products of the dairy. Another speciality developing at this time was horse-breeding, often associated, in particular, with Leicestershire.⁷⁹ Yet although farmers adopted the more buoyantly priced products, they still led a precarious existence. Constant adaptation to the market and the ability to judge finely the minimum needs of his enterprise were the hallmarks of success. In Pitt's words:

The grazier is a kind of merchant; and on his capital

⁷¹ Buckinghamshire CRO: Inventories, D/A/Wf/75/137; 75/146; 71/159, and numerous examples from the Verney correspondence; W Marshall, *The Review and Abstract of the County Reports to the Board of Agriculture*, IV, York, 1815, p 505; St John Priest, *op cit*, pp 297–9; PRO: HO 67/15 returns from Worminghall and Beachampton.

⁷² Pitt, *Northampton*, p 199; the same technique is also evident in Bedfordshire, see T Batchelor, *General View of . . . Bedford*, 1808, p 526.

⁷³ St John Priest, *op cit*, p 288.

⁷⁴ Donaldson, *op cit*, p 50; T Stone, *General View of . . . Bedford*, 1794, p 28. A possible example is given in John Cook's accounts for 1787, Northants CRO: ML 1273.

⁷⁵ A Murray, *General View of Warwick*, 1813, p 133.

⁷⁶ Pitt, *Northampton*, p 37.

⁷⁷ A H John, 'The course of agricultural change 1660–1760', in L S Pressnell (ed), *Studies in the Industrial Revolution*, 1960, p 143 finds seasonal early year rises in beef prices had gone by 1680. For one reason see *The Complete Grazier*, 1767, p 73, showing two batches of cattle fattened on a model Essex farm for sale in September and February.

⁷⁸ Crutchley, *op cit*, p 16; Donaldson, *op cit*, p 25; Pitt, *Northampton*, pp 129, 135.

⁷⁹ D Defoe, *A Tour through the Whole Island of Great Britain*, 1927 edn, II, pp 89–90.

and judicious management depends his success. . . . his profit in a great measure depends upon his laying in a judicious selection of lean stock upon reasonable terms.⁸⁰

V

In conclusion, consideration of agricultural practices in the south-eastern midland plain over the period 1500–1800 has led to certain criticisms of the part played by up-and-down husbandry in Dr Kerridge's *Agricultural Revolution*. It has been argued that different parts of the midland plain each have their own agricultural and soil characteristics which made for considerable variation in farming, and that the rise of up-and-down husbandry before 1650 does not so much mark a completed revolution as a phase of development which accorded with the economic and social circumstances of its time. After 1650, and certainly by 1800, large areas of heavy clays (perhaps one-half of the area of the six counties considered) were laid down to permanent grass. Permanent grassland farming was primarily a low-cost response to the rise of intensive light-land mixed farming, but (contrary to the views expressed by Young and Marshall) underwent some improvement by the application of fertilizers, rotational mowing, and drainage and other

techniques. Concentration on the specialties best suited to the soil and market conditions would not have been possible without the simultaneous growth of sophisticated markets and improved transport facilities. The growth of London, and later of Birmingham and the west midlands, was therefore a powerful influence.

Such a re-evaluation leaves many interesting avenues unexplored. The relationship between an increasingly pastoral economy and the rise of rural industries such as lace-making and straw-plaiting in Buckinghamshire and Bedfordshire, leather-working in Northamptonshire, and hosiery in Leicestershire, may need some re-definition.⁸¹ If enclosure between 1650 and 1760, or even 1780, led to conversion to pasture in so many areas, any accurate assessment of the financial return to the landlord from enclosure pure and simple becomes much more difficult. Finally, permanent pasture farming was as much as alternate husbandry the consequence of particular economic, social and geographical circumstances. With the Napoleonic wars and the rapid population and urban growth of the first half of the nineteenth century, these once again altered in ways which are beyond the scope of this paper.

⁸⁰ Pitt, *Northampton*, p 46.

⁸¹ G F R Spenceley, 'The Origins of the English Pillow Lace Industry', *Ag Hist Rev*, XXI, 1973, pp 81–93.

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(continued on page 119)

Adjustments in Arable Farming after the Napoleonic Wars

By A R WILKES

IN 1968 E L Jones remarked that the writing of nineteenth-century agricultural history was at an awkward in-between stage.¹ His assertion is still true especially of the years between the end of the Napoleonic Wars and the repeal of the corn laws. While the traditional wisdom of Lord Ernle is doubted, no complete alternative hypothesis has been advanced. The critique of Ernle, however, has focused on his unquestioning acceptance of the evidence on agricultural distress presented to parliamentary Select Committees in the twenty years after Waterloo, which encouraged him to depict the period as one of pervasive depression. Monographs on the more advanced areas have emphasized the differences between the more dynamic light-land farmers and the hard-pressed clayland arable farmers.² It is this strand of research which, above all, appears to colour modern interpretation, even though the local studies have not yet been properly integrated to produce a national picture. The aim of this paper is to put forward an alternative hypothesis for the post-Napoleonic War period by reinterpreting certain evidence used in other works, but also by putting forward hitherto unused sources.³ It is not intended to re-examine the case for considering the period as one of depression but to consider in detail those patterns of response to the post-war price fall which can be observed in English arable farming. Initially

this will require some comment on what caused agricultural prices to fall and an examination of contemporary analysis. An adjustment is nearly always a reaction, and if contemporary judgement can be shown to have been false this is clearly of significance. Secondly, an attempt will be made to show that the new orthodoxy of English agricultural history, which puts down most increased production to the dynamic light-land sector and emphasizes the role of increased yield per acre in raising agricultural production, fails to take into account important developments in early nineteenth-century farming, namely a large increase in the national wheat acreage, some of which occurred on the claylands, which while they remained England's traditional granary soils have come to be regarded as a laggard sector. Above all, an attempt will be made to consider agricultural adjustment from the point of view of the English farmer, that comparatively neglected figure of agricultural history.

I

The fall in the price of cereals after 1813 was both sudden and dramatic. The price of wheat (perennial yardstick of agricultural prosperity) more than halved between January 1813 and December 1815; similar falls occurred in the prices of barley and oats. In the short term the price fall must be attributed to a reversal of those factors which had served to raise the prices during the war. Hence the bumper harvest of 1813 revealed the productive potential of the extended wartime acreage which had previously been masked by deficient harvests. At the same time imports became more readily available, while the

¹ E L Jones, *The Development of English Agriculture*, 1968, p 9.

² D B Grigg, *The Agricultural Revolution in South Lincolnshire*, 1966; A Harris, *The Rural Landscape of the East Riding of Yorkshire*, 1961.

³ A fuller discussion of the post-Napoleonic War period is available in my 'Depression and Recovery in English Agriculture after the Napoleonic Wars', unpublished PhD thesis, Univ Reading, 1975.

reduction in freight and insurance charges lowered their costs. The inflationary elements of extensive government purchases, and bulk-buying by corn merchants anxious to secure a speculative price increase above the market rate, were withdrawn.

However, the combination of circumstances which had reduced prices in 1813 and 1814 were not long-lasting. After 1815 imports were forbidden except when wheat prices reached 80s per quarter; and as the 1822 Corn Law amendment was never operated this prohibition remained in force until 1828. Indeed, after 1815 high imports coincided with high prices, as they had done during the war. Contemporaries attributed some influence to Irish imports, which were at their largest in years when prices were low. However, over the period 1801–50 Irish imports at their peak amounted to only 0.47 bushels per head of the population of England and Wales. Their influence may have been considerable in certain localities such as South Wales, Cheshire and Lancashire but nationally such figures are insignificant.

When in addition to the fact that imports were generally lower than in 1813 and 1814 it is considered few harvests (at least in the years here under consideration) were as prolific as that of 1813, it is clear that we are observing a long-term decline in agricultural prices for which long-term causes must be discovered. In part this price reduction could be attributed to general deflationary trends in the economy. The price of most manufactured goods fell sharply over the first half of the nineteenth century, largely as a result of technical developments in manufacturing which reduced unit output costs.⁴ However, the price of farm produce is conditioned more by supply and demand than by production costs. The fact that so many farmers complained so readily of distress would appear to undermine any assertion that the price reduction was part of a general deflation. Farmers were not

selling cheaply because cost reductions enabled them to do so.

It is therefore necessary to examine long-term production and consumption patterns. Unless there was a shift towards consumption of cheaper cereals, population growth in the years after 1813 would naturally have created an expanding market of wheat consumers. In the short term the disturbed social conditions of the immediate post-war years may have reduced consumption. However, in view of the tenacity with which wheat consumers during the wartime shortage when prices were high clung to a diet containing that cereal as a major component, it seems unlikely that they would abandon it when prices were low. This low-price argument is further reinforced by the fact that a bushel of wheat produces more flour than a bushel of barley or oats, thus reducing the differential between them in terms of food costs. It seems improbable therefore that wheat-eaters gave up the consumption of that cereal in the early nineteenth century.

The persistence of the price fall in the face of a continuously expanding home market, and the fact that except in years of high prices imports were negligible, pose an interesting question.⁵ Was supply outrunning even this enlarged demand? A complete solution to this problem is hampered by the absence of accurate long-term production statistics. The figures produced by Dr Fairlie present certain problems.⁶ The most obvious is the fact that the series begins only in 1828, thus the immediate post-war trends cannot be enumerated. Secondly, it is impossible to ascertain the degree to which the market returns for wheat represent the sum total available for human consumption. Part of it was undoubtedly used as seed or fed to

⁴ J Burnett, *A History of the Cost of Living*, 1969, pp 199, 214–15; W W Rostow, *The British Economy of the Nineteenth Century*, 1948, p 17.

⁵ Roughly the same proportion of the 15,731,000 inhabitants of England and Wales of 1840 were fed on home-produced wheat as the 10,650,000 of 1813. See J D Chambers, *The Workshop of the World*, 2nd edn, 1968, p 52; J D Chambers and G E Mingay, *The Agricultural Revolution 1750–1880*, 1966, p 208.

⁶ S Fairlie, 'The Corn Laws and British Wheat Production 1829–76', *Econ Hist Rev*, 2nd ser, XXII, 1969.

animals, and in addition we have no way of telling how many farmers ate the wheat grown on their own land. However, using Fairlie's production series as it exists, and dividing it by the population, points to an increase in wheat availability per head in the mid-1830s when wheat prices were low, and a probable decline thereafter.

TABLE 1
Wheat availability in bushels per head, 1828-50⁷

1828	6.4	1840	7.83
1829	6.05	1841	7.86
1830	7.3	1842	—
1831	6.41	1843	7.09
1832	7.44	1844	7.38
1833	7.98	1845	8.9
1834	8.3	1846	7.86
1835	8.53	1847	6.06
1836	9.41	1848	6.96
1837	8.23	1849	6.59
1838	8.51	1850	5.9
1839	6.54		

All of this ties in very well with the price figures which rise in the late 1830s, with qualitative evidence which points to a flooded home market in the mid-1830s, and with the higher import figures of the years 1829-32.⁸

Similar figures are not available for the immediate post-war years; however, the case for assuming that the wheat markets were flooded in 1813 and 1814 has already been discussed. Reliable evidence also points to over-production as the cause of very low prices in the years 1821-23. Thomas Tooke

was content to assign all the blame to over-supply, commenting:

In truth the depression of the average price of wheat at the close of 1822 is fully accounted for. First by the produce of that harvest coming early to market, and being ascertained to be average in point of quality, so that there was no relief nor immediate prospect of it from the pressure of the large surplus, which was then ascertained to be on hand from former years.⁹

In 1821 the Commons Select Committee on Agricultural Distress produced a report of similar persuasion, and ignoring the protestations of witnesses who appeared before it, declared that

So far as the present depression of the markets of agricultural produce is the effect of abundance from our own growth the circumstances arises from a cause which no legislative provision can alleviate.¹⁰

The failure of prices to rise dramatically between these troughs, other than in years of dearth, leads to the conclusion that while the extent to which production outran demand was greater in two distinct periods, ie 1821-23 and 1833-36, wheat production until the late 1830s remained ahead of population growth. This accounts for a great deal of the reduction in price.

Similar arguments relating to barley and oats are harder to substantiate. Figures similar to those calculated by Fairlie can be obtained from parliamentary papers but their reliability is suspect.¹¹ The most reliable barometer of demand for barley is supplied by examining returns relating to the amount of beer brewed. Beer production was fairly stable from 1815 to 1829, any increase being accounted for by population growth.¹² It appears likely, however, that human consumption of barley in bread declined, and these trends may have counteracted each other. Contemporary agricultural opinion favoured

⁷ Fairlie, *op cit*, pp 114-15; B R Mitchell and P Deane, *Abstract of British Historical Statistics*, 1971, p 8.

⁸ In the mid-1830s Simon Gray, a regular and not unperceptive contributor to the *British Farmer's Magazine* urged farmers to withhold their corn from market as an antidote to the prevailing glut: *op cit*, VIII, No 31, May 1834, p 165. In the following year he struck a familiar note: 'Let only those really compelled by distress, whether in Ireland or Britain, come into the market (and these should keep back every quarter they can) for a month or two, and the prices will rise to fair British rates.' *Ibid*, No 34, January 1835, p 165. Figures on imports are from Mitchell and Deane, *op cit*, pp 98-9.

⁹ T Tooke, *A History of Prices*, facsimile edn, 1925, II, p 85.

¹⁰ BPP 1821 (668) IX, p 26.

¹¹ Market returns for barley and oats are contained in *Miscellaneous Accounts and Papers* II, 1898, BPP 1898 (102). For a discussion of their accuracy see Wilkes, *op cit*, pp 21, 23, 50.

¹² Figures on beer production are contained in J Burnett, *Plenty and Want*, 1966, p 27. Arguments on the malt duties are discussed in Wilkes, *op cit*, pp 33-4, 183-5.

repeal of the malt duties to encourage the consumption of barley as animal feed and in home-brewed beer. However, following the passage of the Beer House Act of 1830, beer production rose, and so did the consumption of barley. This coincided with several years in the mid-1830s when the supply of barley was deficient and prices rose.

The price of oats correlated very closely with that of barley.¹³ It is impossible, however, to discover any accurate national consumption or production figures for that cereal. In all probability human consumption declined, but some of the decline may have been offset by the large amounts consumed by horses, the numbers of which may be assumed to have increased as a corollary of increased economic activity. The failure of the price to rise very much suggests that there was a healthy surplus of supply over demand. It is therefore apparent that for twenty years after the Napoleonic Wars the low price of cereals was the by-product of an oversubscribed home market. The factors which brought this about must now be examined.

II

The existence of rising agricultural production during the period of price deflation has long been recognized and has been commented upon as a factor operating against considering the post-Napoleonic War period as one of total depression.¹⁴ E L Jones has advanced the argument that English wheat yields rose by 16 per cent from 1815-19 to 1832-36.¹⁵ This, he claimed, was indicative of how increased production was secured by means of investment in improved techniques to offset low prices by higher production. However, even if we accept that this increase did take place, it could not by itself account for the increased production which must have taken place

during those years to feed the growing population and, as shown, maintain the surplus of supply over demand which depressed prices.

Jones's figures are based on the results of the Cropper Benson surveys. If the adjustment he and Healey suggested is applied to the series then the average yield per acre for 1815-19 was 21.68 bushels, and that for 1832-36 23.098 bushels. If the average demand for those years is estimated by assuming that a population of the arithmetic means of those years consumed at a rate of six bushels per head, the home wheat requirement was 8,528,280 quarters in 1815-19 and 10,914,750 quarters in 1832-36. Combining these figures with the yield (ie multiplying by eight and dividing by bushel yields), the acreage required to meet home demand in 1815-19 was 3,155,981, and in 1832-36 3,479,081. If the acreage had remained stable while the yield rose, production would have been 9,901,101.6 quarters and would have fallen short of demand by 1,013,648.4 quarters or 9.28 per cent. The existence of continuous low prices necessarily shows that demand did not exceed supply. Assuming therefore that an acreage increase was forthcoming to meet the demand, then 57.52 per cent of the increase would (based on these figures) have been obtained from the rise in yield per acre and 42.48 per cent from the increased acreage.

However, Jones's figures may be criticized for giving an upward bias to the yield per acre. Even allowing for the adjustments suggested, it is likely that the surveyors who compiled the series visited the more co-operative farmers whom we may venture to suggest, were likely to have been the more progressive. Secondly, comparison between the years 1815-19 and 1832-36 can be criticized for comparing a run of good harvests in the latter period with a series of indifferent ones in the former. While it remains unlikely that there was no increase in yield per acre over the period, it does seem unlikely that it was as high as that postulated

¹³ The actual figure is 0.9346.

¹⁴ Jones, *op cit*, p 13.

¹⁵ *Ibid*: the figure is based upon statistics in M J R Healey and E L Jones, 'Wheat Yields in England, 1815-1859', *Jour Royal Stat Soc*, Ser A, CXXV, 1962.

were given over to that crop. This applied particularly to areas which had been put under the plough during the Napoleonic Wars and by the gradual consolidating effect of the tread of folded sheep fed on either downland grass, clover or turnips had become fit to grow wheat where previously rye or barley had been cultivated. The most spectacular effects of this were seen on the Lincolnshire Heath and Wolds, on the Yorkshire Wolds, and on the fens where it was claimed, 'vast quantities of wheat have been grown . . . where wheat never grew before, and the crops have proved most abundant'.²²

Thirdly, there is evidence to suggest that wheat production was expanded on the clay soils, England's traditional granary, by means of an increase in the importance of wheat in the rotations and by ploughing up permanent pasture in order to procure a cash crop. Grey of Dilston complained that farmers in Northumberland 'have had recourse to repeating corn crops too frequently and exhausted the land'.²³ Further south, in Buckinghamshire, J Brickwell noted that

About the year 1827, when there was an enquiry here, they were running wheat on wheat; I recollect the time perfectly, but I do not recollect the precise year'.²⁴

In Essex W Downes, a land agent, commented that the breadth of land under wheat was increasing: 'the farmers will take a crop of wheat whenever they have the opportunity of doing so'.²⁵ A great change in the cereal cropping of land in Huntingdonshire was noted by T Bowyer in 1836: 'twenty years before the proportion of wheat to barley had been three acres to five; now it was three to one'.²⁶ Evidence relating to the breaking up of old grassland and its conversion to tillage is abundant. J B Turner, an owner-occupier from Hereford, informed the 1836 Agricultural Committee of the House of Lords that when allowed to break

up a pasture a tenant would usually do so. He claimed that such indulgence had often been granted of late years.²⁷ In Cumberland W Blamire, a witness before the same Committee, observed that the farmers had '... scourged their land more and cropped it harder and broken up more lea than they ought to have done'.²⁸ W Reed, an agent and valuer from Lancashire, noted the break up of pasture in that county and attributed it to the depressing effect on local markets of Irish cattle imports which had forced farmers to grow corn.²⁹ A similar trend was noted in Leicestershire: W Smith, a land agent from Derby, denied that grassland had been broken up on the estates under his control, but thought that other agents had allowed the tenants to plough up pastures. He confirmed that, in general, a great deal of grassland had been broken up in Leicestershire.³⁰

While these people do not refer specifically to clay soils when making these assertions, it is fair to assume that as most of the permanent pasture that would repay ploughing up in the short term lay on heavy soils they are indeed referring to an increase in the wheat acreage on the clays. This connection is definitely made in the evidence of S Wooley, a land and tithe agent from Newark:

Have you found in Rutland that there has been a tendency to break up the old pasture land?

I am not acquainted with Rutland. There has been a great quantity of grassland broken up in Lincolnshire in the last three or four years . . . It has been generally confined to the land most liable to rot sheep.³¹

He was obviously referring to clay soils, the occupiers of which had generally suffered most from the ravages of that disease.

Contemporary evidence is not abundant enough to enable any accurate assessment of which source of the extended wheat acreage was most important. However, it is clear that the previous concentration on cereal

²² *British Farmers' Magazine* (hereafter BFM) IX, No 35, April 1835, p 55.

²³ BPP 1837 (404) V, p 384.

²⁴ BPP 1836 (79) VIII, p 35.

²⁵ BPP 1833 (612) V, p 77.

²⁶ BPP 1836 (79) VIII, p 170.

²⁷ *Ibid.*, p 391.

²⁸ *Ibid.*, p 305.

²⁹ *Ibid.*, pp 179–80.

³⁰ *Ibid.*, p 595.

³¹ *Ibid.*, p 535.

switching on recently cultivated light soils as the source of higher wheat production underestimates or ignores the existence of other sources. In view of contemporary complaints and the claims of modern historians that wheat-growers on heavy soils were the most depressed group this development would appear to be totally illogical. It is therefore necessary to examine those economic pressures which forced farmers to grow more wheat, to examine the alternatives and to suggest why they were rejected.

III

The phenomenon of an increasing supply in the face of a falling price is known as a backward sloping supply curve. The theory of this in relation to wheat production was examined by G R Allen using the example of Saskatchewan in the 1920s and 1930s. He concluded that

... The supply price necessary to call forth new production will often be higher than the supply to maintain that production³² and furthermore that ... a change in the real price of wheat between one harvest and the next during the period 1914-1939 resulted in an opposite short-term movement in the wheat acreages. ... As far as Saskatchewan is concerned there undoubtedly exists a backward sloping supply curve in the short run. The evidence suggests that it was this fact which accounted for the increase in the wheat acreage in the first few years of the 1930s much more than does the impetus of long term expansion.³³

This development was noted by one of the more acute of contemporary observers, Joseph Sanders, who stated in his evidence before the 1836 Committee:

... when there has been a high price of corn and good crops and afterwards a descending scale of prices, that invariably, for one or two years, there is more wheat grown than ever; but that always cures itself in the course of one or two years more, and then they get into another extreme.³⁴

The increase in the wheat acreage was neither uniform nor continuous. Two distinct cycles

can be identified, one reaching a peak in the years 1822-23 and the other at the harvest of 1835. In both cases the original impetus can be ascribed to rising prices. The latter case fits this category more definitely. During the years 1828-31 English harvests were deficient and prices rose. In many cases this was reinforced by the loss of sheep through sheep-rot which forced farmers to increase their wheat acreage. The last development may indeed have prolonged the period of increase. Most of the evidence points to a peak acreage harvest in 1835 followed by a sharp decline.

The earlier cycle is more difficult to date accurately. It has been generally assumed that the cultivated acreage was reduced after the Napoleonic War.³⁵ The *Edinburgh Review* had no doubt about this, and asserted that a re-extension had been brought about by a combination of the 1815 Corn Law and also by the bad seasons of 1816 and 1817 which had raised prices above their natural level.

But this prosperity carried in its bosom the seeds of future mischief. The increased price necessarily occasioned a fresh extension of the tillage: capital was again applied to the soil; and the supply of corn thus being augmented, prices fell.³⁶

How far this represents total objectivity is difficult to decide. The *Edinburgh Review* was opposed to the Corn Laws and was unlikely to be sympathetic to the needs of the farmers if they in any way clashed with the interests of the consumer. However, the beginning of this cycle can be dated as 1816-17. Its continuance can be traced to 1822-23 but establishing when it ended has proved more difficult.³⁷ There does not appear to have been a large-scale movement away from wheat such as occurred in 1835. Economic alternatives in the form of spring grain or pasture did not present themselves as

³² G R Allen, 'Wheat Farmers and Falling Prices', *The Farm Economist*, VII, 8, 1954, p 336.

³³ *Ibid*, p 338.

³⁴ BPP 1836 (189) VIII, p 152.

³⁵ 'The edge of cultivation was pushed beyond even the obliterating limits of the second World War's reclamation campaign, so that abandoned Napoleonic ploughing rig survives far up on the chalk downs and Dartmoor and out on the New Forest heaths': Jones, *op cit*, p 10.

³⁶ J R McCulloch, 'Progress and Present State of Agriculture', *Edinburgh Review*, XXXVI, no 72, Feb 1836, pp 460-1.

³⁷ *Supra* p 92.

obviously as they did in 1835. Had a movement towards these occurred it would surely have received notice in the farming press. It is more likely that the expansion tailed off and that if there was any reduction it was not dramatic and attracted little attention. Comment upon extensions of the wheat acreage ended in 1822, but there is no indication of any reduction until 1825, and that referred only to parts of Scotland.³⁸ Just as the temporary halt to the increase in the wheat acreage was ended by the rising prices of the late 1820s, so the widespread falling off in 1835 was reversed in the autumn of 1837 when high prices encouraged re-extension.³⁹

The economic forces which operated to compel farmers to grow more wheat can be fairly easily analysed. Rising wheat prices necessarily encouraged its cultivation, falling prices may easily have made increased production imperative. A farmer facing a crisis of diminishing returns and stable overheads needed to accelerate his cash flows and to secure the largest possible monetary return per acre. On balance, despite the large fall in the price, the best way to achieve both of these in the short term was to grow more wheat. By taking a long-term view of price movements we can see that the prices of barley and oats fell by less than that of wheat. However, to a farmer who had to deal in absolute values and related prices rather than in long-term trends, this was likely to count for less than the return per acre supplied by each crop, assuming his land could support them. The price-correlation between the major bread grains was very close in the first half of the nineteenth century.⁴⁰ The degree to which prices fluctuated can be seen in

Table 2. While the gap between wheat and barley prices narrowed gradually, in only eleven years was it less than 40 per cent. The gap between wheat and oats also decreased marginally, but in only thirteen years was it less than 50 per cent. Thus in order to produce the same monetary return per acre barley had to yield 40 per cent more than wheat on the same soil, and oats 50 per cent more.⁴¹

Some of this difference in return would have been compensated by the costs involved in producing different cereals. Unfortunately these are almost impossible to estimate on a national scale. Contemporary calculations of production costs are at best tenuous, since cost accounting was in its infancy as far as farmers were concerned. Naturally the amount involved in producing a given crop depended to a large extent on the method employed; for example, should the cost of the fallow be totally laid on the wheat crop or divided over the rotation? Several of the witnesses who appeared before the 1821 Select Committee on Agriculture presented their ideas on production costs and returns per acre, but in many cases these require some adjustment to obtain a true picture. Their usefulness lies in allowing us to obtain some idea of the costs and returns involved, not only as we can see them but as they were estimated through the eyes of contemporaries who were making adjustments in their farming systems to counteract the price fall.

J Lake presented accounts on operating a seven-tillth system in Kent. He estimated the cost of growing one acre of barley as £6 10s 6d and one of oats as £6 15s 6d. Wheat appeared twice in the course, the cost being £7 5s 3d and £8 17s 3d; in the latter case a charge of £1 10s 0d for manure was included. In all these figures allowances were made for tithe

³⁸ *Farmers' Magazine*, XXVI, No 102, May 1825: 'The breadth of wheat in this quarter seems to decrease; but so it ought, as much of it was lately sown on land totally unfit to grow it to advantage.'

³⁹ BFM, NS, I, no 4, Jan 1838, p 497; *Farmers' Magazine*, VIII, i, Jan 1838, p 73; *Quar Jour Ag*, IX, 1838-39, p 138.

⁴⁰ The correlation coefficients are: between wheat and barley 0.8533; wheat and oats 0.8677; and barley and oats 0.9346 (calculations using the CDC 7600 version of Time Series Process. I am grateful to Paul Kelly a former postgraduate colleague for demonstrating the use of this programme).

⁴¹ According to Caird's estimates, barley yielded 28.9 per cent more than wheat, the yield of oats exceeded that of wheat by 39.7 per cent. *English Agriculture in 1850-51*, new edn, 1968, p 522. The differentials for the period 1800-16 were: between barley and wheat 34.3 per cent; and between oats and wheat 39.1 per cent. (I am grateful to Dr E J T Collins for the latter figures.)

TABLE 2
Percentage price differentials between
wheat, barley and oats, 1813-50

	A Price of wheat exceeded price of barley by per cent	B Price of wheat exceeded price of oats by per cent	C Price of barley exceeded price of oats by per cent
1813	45.7	64.8	35.3
1814	49.7	65.5	31.5
1815	53.9	64.0	21.8
1816	56.9	65.3	19.5
1817	48.9	66.5	34.4
1818	37.7	62.5	39.7
1819	38.8	62.1	38.1
1820	50.1	64.3	28.4
1821	53.7	68.3	25.0
1822	51.1	59.1	16.5
1823	41.0	57.3	27.6
1824	42.9	61.1	31.8
1825	41.6	62.6	36.0
1826	41.2	54.6	22.6
1827	35.7	51.7	25.0
1828	45.7	62.7	31.4
1829	51.0	65.6	29.8
1830	49.2	61.9	28.1
1831	42.7	61.7	33.1
1832	43.3	65.1	38.5
1833	47.9	65.1	33.0
1834	37.2	54.9	28.2
1835	32.6	44.1	26.1
1836	32.3	52.1	29.2
1837	45.5	58.4	23.6
1838	48.2	65.3	32.9
1839	44.0	63.4	14.6
1840	45.1	61.4	29.6
1841	49.0	64.9	31.7
1842	51.9	66.4	30.2
1843	41.2	63.3	37.6
1844	34.3	61.2	38.6
1845	37.7	65.7	28.7
1846	40.2	56.7	27.5
1847	31.4	58.9	35.2
1848	37.6	59.4	34.9
1849	37.5	60.4	36.5
1850	41.7	59.2	29.9

at 16s, interest on capital 12s, and rent and rates £2 10s 0d. The return per acre was also calculated: barley yielded 36 bushels, sold at 4s, total £7 4s 0d; wheat 32 bushels at 10s, total £16 0s 0d; oats 48 bushels at 3s, total £7 4s 0d.⁴² All the costings were based upon cereals selling at the importing prices of the 1815 Corn Law. His costs per acre have to be adjusted downwards, therefore, to allow for a lower seed price. Using the average corn prices for 1821 this would reduce the cost of growing one acre of wheat by 9s, barley by 3s 7d; and oats by 3s, producing costs of £6 16s 9d and £8 8s 3d for wheat, £6 6s 11d for barley, and £6 12s 6d for oats.

A second estimate was provided to the same committee by William Illott.⁴³ He calculated that the operations of a four-course shift produced one acre of barley at a cost of £6 16s 3d, and one acre of wheat at £8 2s 7d. The barley yielded four quarters per acre, which at 24s per quarter returned £5 according to his calculation (an error of 4s, the actual return being £4 16s 0d). Wheat yielded 20 bushels per acre, which sold for 7s, producing a net return of £7. While neither product showed a profit the loss was least on the wheat crop. His costings were very full, and the prices he used reflect those current.

William Stickney also presented a set of accounts in evidence before the same Committee.⁴⁴ He estimated that on turnip soil farmed on a nine-year course, barley cost (exclusive of rent and tax) £3 8s 5½d; and returned £5 0s 0d. Wheat cost £3 12s 0d per acre and yielded three quarters which sold at £2 14s 8d, producing a net return of £8 4s 0d. On strong soils wheat was less economic. By charging to it the cost of the fallow year, expenses were £7 1s 7d the first time it was grown, and £8 1s 8d the second, which charge included £2 11s 0d for the application of lime. The produce was again £8 4s 0d. Oats cost £3 12s 11d and were estimated (perhaps over-estimated would be a better term) to produce

⁴² BPP 1821 (608) IX, pp 69-71.

⁴³ Ibid, pp 140-4.

⁴⁴ Ibid, pp 152-9.

seven quarters at 18s 5d, ie £6 8s 11d; per acre. However, he had charged all the costs of two fallows and all the manures to the wheat crops, making an extra £9 8s 6d in all. As the benefits of these would be felt by all the crops in the course it seems an unfair burden. Conversely, it is impossible to distinguish the benefits each individual crop would receive, and obviously the benefit was not divided equally; simply dividing the total by nine would be inappropriate. Clearly, however, the production costs for oats would rise and those for wheat fall. Bearing in mind that the yields he used for oats appear high, the cost and produce differential are probably inaccurate. A fairer estimate would probably be five quarters of oats at 18s 5d, a total of £4 12s 1d per acre compared with the £8 4s 0d estimated for wheat, thus reversing the profit differential.

While these estimates are by no means conclusive, they illustrate that in terms of pure monetary returns based upon average prices wheat was an advantageous crop. Such reasoning would carry great weight on newly-reclaimed land, or land put under the plough during the Napoleonic Wars, often at great expense. In addition it the demand for barley and oats was depressed more than the demand for wheat after the war. Thus in his evidence to the 1821 Committee G Brown George noted:

... a great avidity to bring land into a course of cultivation for wheat; and a corresponding indifference respecting the cultivation of barley.⁴⁵

The logic of this was well expressed by a correspondent of the *Farmer's Magazine*, who wrote in 1822:

... low as that grain [wheat] sells, it is out of all comparison easier to get quit of than barley. And, throughout the greater part of this district [East Lothian] at least as many bolls of wheat, in ordinary years, can be raised as barley; that is to say when wheat can be got sown by this time of year; and ten shillings per boll the difference at present between the price of those grains is a point of greatest consideration, but especially in seasons like this.⁴⁶

Some farmers, however, had no choice in the matter. On clayland arable farms the decision to grow wheat was often based not so much upon the desire to grow a higher-priced cereal as on the fact there was no alternative to meet overheads. In addition, on some farms the increased acreage of the 1830s may have been partly accidental. Three consecutive autumns when the weather was good for sowing wheat coincided with the periods of low prices, and thus farmers took the easiest and most obvious way out of their difficulties.⁴⁷ Indeed this proved most convenient to farmers who had seen their flocks reduced by the ravages of sheep-rot, the numbers of which could only be increased by purchases on the highly inflated stores market. This probably forced many of them to cultivate extra cereal crops, a trend facilitated by the fortuitous seasons.

In part the instigators of this increase in the area under wheat were the landlords, who either turned a blind eye to the abrogation of cropping covenants or encouraged it in order to maintain rentals. A good example of the dilemma this posed is provided by an incident on the Bothal Barony, a clayland Northumberland estate owned by the Duke of Portland. During 1832 and early 1833 the agent, William Sample, recommended to Portland that a 20 per cent rental reduction should be allowed.⁴⁸ Portland was not convinced of this but agreed to allow three of the tenants who had applied for reductions to have their farms valued by a third party.⁴⁹ The valuer, a local land agent called William Nelson, rejected Sample's ideas for lowering the pivot price on the corn rent system used on the estate, which would have the effect of lowering the rentals. But he stressed that in order to maintain the rental levels the farmers would have to grow more corn.⁵⁰ Had

⁴⁷ BFM, IX, no 35, April 1835, p 54.

⁴⁸ Northumberland Record Office (hereafter NRO) Bothal Sample MS ZSA 1/2. Letter Books. Sample to Portland 25.1.33.

⁴⁹ Ibid, 15.3.33.

⁵⁰ NRO, ZSA 1/1 Portland to Sample 15.3.33.

⁴⁵ BPP 1821 (608) IX, p 92.

⁴⁶ Op cit, XXII, no 89, Feb 1822, p 114.

Portland been solely concerned with maintaining his rent roll he must surely have allowed his tenants a certain latitude in observing their cropping agreements.

However, the farmers were also to blame, especially if they indulged in cross-cropping and lowered the standard of their farming. But in the face of stable overheads and diminishing returns they could do little other than seek sanctuary in extra production. The technical disabilities inherent in clayland arable farms at this time, and the high capital cost involved in overcoming them, in most cases precluded increased production via new techniques and forced the farmer to plough up grassland and neglect his fallows. Adam Murray told the 1833 Select Committee that 'there is a good deal of old grassland broken up to raise money to meet the exigencies of the times'.⁵¹ W Smith described the breaking up of grasslands, and on being asked why replied, 'From the poverty of the occupier; he gets a crop of corn to enable him to pay his rent, and he sells his breeding cattle'.⁵² Similar reasons were advanced to explain the breaking up of pastures in Lancashire and in Leicestershire, where it was stressed that the landlords had given permission for this development.⁵³

From such a system produced as it was by lack of capital, it proved difficult to depart. The farmer was producing a commodity which was gradually falling in price, and it is probable that with over-cropping the yield per acre was reduced. Alternative grain crops were out of the question as they produced a lower return per acre. The other alternative rested in a shift of productive capacity into livestock.

IV

Modern work on the post-Napoleonic War period has focused attention on the fact that livestock farmers suffered less in most years than those who put their faith in arable crops.

⁵¹ BPP 1833 V, p 17.

⁵² Ibid, p 594.

⁵³ Ibid, pp 138, 180.

By implication, therefore, it should follow that had those farmers who complained so loudly of agricultural distress invested more time and money in expanding the livestock side of their business they would have suffered less. It is evident, however, that the advantages envisaged by historians in making such a change were not so obvious to contemporary farmers. Comments to the Select Committees focused on the difficulties of creating good quality pastures, especially from exhausted land. While detailed descriptions of the techniques involved in grassing down land were available, they were very much in the vanguard of agricultural progress and beyond the capacity of most farmers. Even the most optimistic commentators wished to allow a sward development of two years before the pasture was stocked.⁵⁴ To a hard-pressed farmer such a suspension of income, combined with the capital requirements of stocking the land, was a very powerful constraint. Problems of adjusting field layout and building use also arose. Finally, the farmer would be basing his adjustments on short-term rather than long-term prices. Over the years 1813–50 the price correlation between meat and cereals was high.⁵⁵ Thus returns to livestock farmers were at their lowest at the same time as returns to arable farmers. Why then spend time, money and effort reducing output of the traditional rent-payer in order to embark on a new operation?

By the mid-1830s however, attitudes had begun to change. As wheat prices reached their nadir in 1835 a trend towards livestock

⁵⁴ F Blaikie, *On the Conversion of Arable Land into Pasture*, 1817; G Sinclair 'On Converting Clay Land into Permanent Pasture'; *Quar Jour Ag*, III, 1831–32; and 'On Converting Strong Loam into Permanent Pasture'. Ibid, IV, 1832–34; R H Gregg, *Scotch Farming in the Lothians* — a letter to the editor of the *Manchester Guardian*, 1842. A less sanguine attitude was assumed by J F Burke, *British Husbandry*, I, pp 476–8. For a full discussion of this problem see Wilkes, op cit, pp 219–40.

⁵⁵ The correlation coefficients between cereals and meat over the period 1813–50 were: wheat and mutton 0.7457; wheat and beef 0.7502; barley and mutton 0.6601; barley and beef 0.6419; oats and mutton 0.6741; oats and beef 0.7011.

production became more apparent. There is evidence to suggest that in addition to a movement towards greater livestock production, many farmers adjusted their arable farming systems in the mid-1830s to grow less wheat. This alteration in the opinion of contemporaries, was very dramatic. It represented a complete reversal of the trend since the war and a marked change from the pattern of the immediately preceding years. In the autumn of 1835 the wheat acreage showed a marked decline. The extent of the decline was variously estimated as one-fifth in the *Quarterly Journal of Agriculture*, between one-fifth and one-quarter by Thomas Tooke, and one-eighth in *Bell's Weekly Messenger*.⁵⁶ This was largely brought about by the very low wheat price of that year. Joseph Sanders expressed this very well:

There is a point of poverty to which they fall which makes them reason, and shows them the folly of running out the land.⁵⁷

In view of the fact that prior to 1835 low prices had generally encouraged the cultivation of wheat it is necessary to discover what alternatives were adopted and what, other than the low price of wheat, made them appear attractive.

V

Part of the reduction in the wheat acreage can be accounted for by the fodder shortage of 1835. The *British Farmer's Magazine* reported that land normally sown with what had been given over to winter tares, the low price of wheat and shortage of fodder having encouraged such a course.⁵⁸ But there is evidence to suggest that many farmers also made a positive decision to cultivate other cereals. In December 1835 *Bell's Weekly Messenger* described

many hundreds of acres of grass in which ought to have been sown wheat, but which owing to the price, and want of manure are left to be sown with oats.⁵⁹

⁵⁶ QJA, VIII, p 103; Tooke, op cit, II, p 257; *Bell's Weekly Messenger*, 5 Dec 1836.

⁵⁷ BPP 1836 (189) VIII, p 152.

⁵⁸ BFM, IX, no 38, Jan 1836, p 508.

⁵⁹ BWM, 7 Dec 1835.

Certainly in 1836 the price differential between wheat and oats was at its lowest for the period 1813–50, and that between oats and barley was also low. However, it seems likely that more farmers would have chosen, where possible, to substitute barley for wheat than oats. As early as July 1834 a correspondent of the *British Farmer's Magazine* commented that

The price of malting barley, for instance, is weight for weight approaching that of wheat; and when the malting season commences, may be even higher: this has rarely happened in corn market history.⁶⁰

In 1835 and 1836 the prices of barley and oats were even closer together and the returns per acre similar. It is possible that barley was easier to sell in those years than was wheat. Hence the *Quarterly Journal of Agriculture* noted somewhat soberly:

The depressed currency of wheat, and more than relative value of barley in 1835, induced farmers to sow a larger breadth of land with the latter article.⁶¹

Confirmation of the fact that barley had occupied the majority of the space was provided by a report in *Bell's Weekly Messenger* in 1836. The growth of barley had been adopted because the English market for oats was liable to competition from cheaper Irish produce.⁶²

Obviously not all farmers reacted in the same manner. Samuel Goodman reported to the 1836 Select Committee that he differed amazingly from most farmers: he was growing more wheat than ever.⁶³ W Umbers reported that the general alteration had been 'very extensive, but he had not deviated much from my normal rule'.⁶⁴ In complete contrast J Brickwell had completely abandoned wheat growing.⁶⁵ Other witnesses detailed reductions of the wheat acreage in Kent, Sussex, Buckinghamshire, Glamorgan, Gloucestershire, Somerset, Essex, and

⁶⁰ BFM, VIII, no 32, July 1834, p 316.

⁶¹ QJA, VII, p 422.

⁶² BWM, 5 Dec 1836. For confirmation of this competition with Irish-grown oats see *Farmers' Magazine*, VIII, no 8, 1838, and QJA, IX, 1838, p 141.

⁶³ BPP 1836 (465) VIII, p 88.

⁶⁴ BPP 1836 (189) VIII, p 225.

⁶⁵ BPP 1836 (79) VIII, p 225.

Norfolk.⁶⁶ While these are indicative of the over-all decline they can only represent the sum total of the experiences of the individual witnesses. They cannot be used to discover the amounts by which the wheat acreage decreased in different areas. Some comment on this is contained in a report in *Bell's Weekly Messenger* which pointed out that in the

... great wheat growing counties in the South East and South of England, the average decrease may be safely estimated at not under one eighth. Where wheat is less extensively cultivated, the transition to other descriptions of grain was more easy and a greater proportional reduction of wheat sowing has been the consequence.⁶⁷

This was confirmed in the *Quarterly Journal of Agriculture* where it was asserted that the reduction was least in those counties supplying London, which we may venture to assert were in the south-east and south, and much greater elsewhere.⁶⁸

VI

Thus it is apparent that in the autumn of 1835 there occurred a change in the pattern of agricultural response to falling wheat prices which had existed since the war. Even in the 1820s there had been no large-scale movement away from wheat growing, simply a tailing-off of expansion. This change in response coincides with signs that prosperity was returning to English agriculture. Petitioning Parliament on the subject of agricultural distress abruptly ceased, and the political movement aimed at obtaining legislative relief

for agriculture came to an end.⁶⁹ Indeed, in the autumn of 1836 a correspondent of the *British Farmer's Magazine* concluded from his conversations that the farmers were 'less repining than usual'.⁷⁰ Such evidence indicating a return of prosperity coincidental with a change of cropping patterns suggests that profits were being secured by cultivating those crops most suitable to the farms on which they were grown.

It has already been shown that the wheat acreage began to expand again in the autumn of 1837. However, this re-expansion can be seen to represent a very different response from the previous increases. In all of the abundant evidence relating to English agriculture it has been possible to discover only one isolated reference to a backward sloping supply curve.⁷¹ This suggests that throughout the 1840s the margin of profit on wheat was sufficient to enable farmers to make normal adjustments to price changes. Had the increased acreage been secured on marginal land this is unlikely to have been the case.

Secondly, yield per acre continued to rise at the same time as acreage expanded. Thus it is highly unlikely that the expansion was taking place on marginal land. Indeed, much of the increased yield per acre must have been brought about by the application of new fertilizers and feeds, which in the latter case increased the level of animal manurial residues which contemporary improvers were so enthusiastic to use efficiently.⁷² As these represented the vanguard of agricultural progress it appears logical to assume that they

⁶⁶ BPP 1837 (404) V, pp 10, 252; BPP 1836 (79) VIII, pp 20, 203; BPP 1836 (189) VIII, pp 165, 218, 225-30, 237; BPP 1836 (465) VIII, pp 71, 101, 154, 172.

⁶⁷ BWM, 5 Dec 1836.

⁶⁸ 'Retrospect of the British and Foreign Corn Trade for the half year preceding November 1836', *Quar Jour Ag*, VII, p 418.

⁶⁹ For a fuller discussion of agricultural politics see Wilkes, *op cit*, ch IV, pp 169-203. Evidence of the return of prosperity is abundantly supplied by the rise in prices and the end of political agitation. It is also worthy of note that several witnesses who appeared before the 1846 Select Committee of the House of Lords on the burdens affecting real property mentioned that after 1835 prosperity returned to English agriculture: BPP 1846 (411) VI, pp 53, 489.

⁷⁰ BFM, X, no 41, Oct 1836, p 490.

⁷¹ Caird, *op cit*, p 56.

⁷² F M L Thompson 'The Second Agricultural Revolution' *Econ Hist Rev*, 2nd ser, XXI, 1968.

were in the hands of the large-scale arable farmers of southern and eastern England who were most likely to be able to afford these improvements and also to apply them properly. Having raised their yield per acre they would be alive to the idea of extending their acreage.

It is probable therefore that the dramatic reductions of the wheat acreage which took place in the autumn of 1835 was least in the south-eastern counties where conditions were best suited to its cultivation and greatest in those areas where wheat was less economic. The very low prices of the mid-1830s had finally forced the least efficient farmers to abandon wheat while permitting others to continue its cultivation. When the price of wheat increased again those farmers who had either abandoned or made a great reduction in its cultivation were less inclined to extend its growth.⁷³ Support for this theory is supplied, indirectly, by the series of British wheat production figures calculated by Dr Fairlie. She concluded that the decline in net output of British wheat after 1846 was 'caused by the withdrawal of precisely those low efficiency farmers on marginal lands (perhaps mostly small farmers)',⁷⁴ she noted that the increased production of the 1840s occurred in counties such as Lincolnshire, Cambridgeshire, Hampshire, Dorset, Nottinghamshire, Yorkshire, Cumberland, Norfolk, and Suffolk. In other areas a decline in sales set in, caused by the competition posed by imports. However, in view of the fact that before 1846 imports were, in Dr Fairlie's own word, 'insignificant', this could be seen as part of the rationalization of the national cereal acreage which concentrated production in those areas best suited for growing wheat. Those areas of north and west England which

moved away from the cultivation of wheat turned increasingly to livestock as their staple produce.

VII

For twenty years after the Napoleonic Wars the response of England's farmers to low wheat prices was to produce more. While some of this increase was obtained from higher yields, the major part came from a vastly expanded acreage. This development appears to have taken place throughout the country. Although on some farms it was a positive economic response, ie a turning to the cultivation of a higher-priced cereal, on many it represented the only possible response by farmers already growing wheat as their main crop. Such people were unable or unwilling to adjust to other types of farming, and they were forced increasingly to pin their hopes on the traditional rent-payer, often at the expense of good farming. This pattern did not change until the mid-1830s. In those years wheat prices reached totally uneconomic levels, but at the same time alternatives, which had previously been lacking, presented themselves. Many farmers then moved away from the cultivation of wheat to concentrate on other cereals or on livestock. When the wheat acreage expanded again in the 1840s it represented a more logical response to price movements. Initially the impetus was provided by high prices, but when prices fell there are signs to suggest that farmers were better able to combat the fall, either by raising yield per acre or by reducing the growth of wheat. Over all these adjustments suggest that English farming was more troubled after the Napoleonic Wars than recent writers have allowed. However, of even more importance is the significance imparted to the 1830s in English agricultural history. Those years represent a decisive turning point when the trends of the previous twenty years were reversed and English agriculture emerged from the post-Napoleonic War period ready to enter its 'golden age'.

⁷³ This would suggest that the late 1830s and early 1840s witnessed a decisive step towards regional specialization in English agriculture. However, the full examination of such an hypothesis would require greater space than can be devoted to it here.

⁷⁴ Fairlie, *op cit*, p 109.

The Economic Development of a Middlesex Village*

By DOUGLAS MOSS

IN the region that R H Hilton calls 'market-oriented south-east England', striking divergencies are to be expected from the normal pattern of economic development during the late Middle Ages. My own investigations of the Middlesex village of Tottenham provide an example of such abnormalities. By a fortunate chance a vast collection of Tottenham manorial documents has survived, commencing in 1318 and becoming almost continuous from 1375. Not only court rolls, but extents, rentals, accounts, custumals and a terrier have been preserved: all the materials necessary for tracing in detail the evolution of the economy of the village.

Proximity to the great city of London, the only place in England which could compare with the larger Continental urban centres, must have been a prime factor influencing this evolution. An account of Tottenham's history from Domesday to the late fifteenth century shows how, as the years went by, the influence of the capital shaped the life of its tiny neighbour. This was particularly so after the Black Death drastically reduced the population of England. Demand for grain fell, grain prices dropped, demesnes formerly producing cereals for the market were leased: this is an old story. As the price of cereals fell,

meat prices rose. Léopold Genicot gives a table comparing the two contrary changes in price-level in England.¹ It is thought that rising wages, together with the fact that less money had to be found for bread, provided a surplus available for the purchase of meat, thus inducing the increase in the price of that commodity. The number of cattle kept on the Winchester estates rose.² Supplies of meat for London came in from East Anglia and Essex. Most significant, fresh meat and live animals were regularly purchased at Guildford market all the year round (except during Lent) by Lady Margaret Beaufort in the 1470s.³ There is no apparent reason why Guildford market should have been exceptional in this respect.

The problem, as Professor Genicot points out, is that of knowing how the animals were fed during the winter months and so kept alive in sufficient quantity. He suggests that increased production of legumes and their use as animal food was one way.⁴ The research, respectively, of F R H Du Boulay, P F Brandon and W G Hoskins shows that in Kent, Sussex and Leicestershire, among other regions, legumes were one of the main crops in the late Middle Ages.⁵ Although as a smaller proportion of the whole crop than in the aforementioned counties, legumes were cultivated in both Hackney and Tottenham.

*The first draft of this essay was read before the Edmonton Hundred Historical Society and at Professor F R Du Boulay's seminar at the Institute of Historical Research. I wish to express gratitude for helpful criticisms received from members of both these bodies, not least from Professor Du Boulay himself. Advice and help have also been given by Professor R H Hilton, Dr David Avery, Dr Michael Hicks, Mr Ian Murray (the Haringey archivist), Mr Bryan Benjamin, and Mr David Pam. I must also record my thanks to Professor Kevin McDonnell for permission to refer to his PhD thesis. Responsibility for the views expressed remains entirely my own.

¹ L Genicot, 'Crisis: From the Middle Ages to Modern Times', M Postan (ed), *Cambridge Economic History of Europe I*, Cambridge, 1966, p 687.

² D L Farmer, 'Grain Yields on the Winchester Manors in the Later Middle Ages', *Econ Hist Rev*, 2nd Ser, XXX, 1977, p 563.

³ *Westminster Abbey Muniments 12181-90*. For this information I am indebted to Mrs Jennie Thurgood.

⁴ L Genicot, *op cit*, p 717.

⁵ F R H Du Boulay, *The Lordship of Canterbury*, 1966, pp 208-90, P F Brandon, 'Cereal Yields on the Sussex Estates of Battle Abbey during the Later Middle Ages', *Econ Hist Rev*, 2nd Ser, XXV, 1972, pp 405-6.

Secondly, Genicot believes that large areas of arable land may have been converted to pasture so that there could be sufficient nourishment for animals, even in the winter months.⁶ Thereby what might almost be called a minor agricultural revolution was achieved. One would expect the neighbourhood of the great London market to provide examples of such a process, if it did take place. The following account of the changes in Tottenham — made possible by the abundance of documents — is, therefore, of general interest to students of medieval economic history. But in addition it shows in very great detail how those changes actually happened in one particular village. Associated with these developments there were others (to be described) which radically altered the life of its inhabitants.

I

Nowadays Tottenham forms part of the London Borough of Haringey. Tottenham is situated in the northern part of the Greater London area, astride the A10 (the Roman Ermine Street), and stretches from Highgate and Muswell Hills on the west down to the River Lea on the east. The Lea forms the boundary with Essex; beyond is the borough of Walthamstow. Medieval Tottenham also included modern Wood Green, thus covering a total area of 4642 acres. Originally it had been forest; in 1459 a large wooded area still remained in the north-west quarter (the present-day Wood Green). The soil is basically London clay to the west of the A10, apart from an area of Taplow gravel round Bruce Castle. On the east side of the highway brick earth predominates until the alluvial soil of the Lea Valley is reached.

Until 1254 the township had long been a possession of the Scottish crown. In that year there was no direct succession and the manor was divided into three parts, owned respectively by Robert de Brus, John de Balliol and Henry de Hastings, Earl of

Pembroke. The Balliol manor, in 1295, and the Brus manor, in 1306, were forfeited to the English crown in consequence of the rebellion of their lords. By mid-fourteenth century the Balliol manor was in the possession of the Daubeney family, the Brus manor was in the hands of the Fawkoners. In the course of the years several sub-manors appeared, chief of which were Mocking and Twyford. Between 1427 and 1449, the year of his death, all were re-united in the hands of John Gedeney, a London alderman and member of the Drapers Company.

The fact that Tottenham was a settlement which arose as a clearing in forest country, was to influence its future field structure and agricultural system. Exactly when one, Tote, made the first clearing, probably near to the river Moselle as it follows its circuitous route towards its junction with the Lea, we do not know. The first appearance of the village in recorded history was due to Edmund Ironside, advancing in 1016, by little-known paths through Clayhanger, in the wood of Middlesex, to attack the Danes. Sir Frank Stenton identifies the place referred to in this statement of the Anglo-Saxon Chronicle with Clayhanger in the south of Tottenham, which is approximately where Stamford Hill Station stands today.⁷ By 1086, only seventy years later, Domesday Book implies that there were some 1200 acres of cultivated land.⁸ The Inquisition Post Mortem of 1254, when the direct succession to the ownership of Tottenham by the Scottish royal house terminated, enumerates 527 acres of demesne arable and 1200 acres of villein arable.⁹ The terrier of 1459, to which further reference will be made, shows that the amount of land held by free tenants was at least 1000 acres, and probably much more, of cultivated arable.¹⁰

⁷ F M Stenton, *Anglo-Saxon England*, Oxford, 1943, p 386.

⁸ *Domesday Book, Middlesex*, 130d XXIV, Terra Juditae Comitisse.

⁹ W Robinson, *History of Tottenham*, 1840, pp 163–4.

¹⁰ *Bruce Castle Museum Archives* (after, Bruce) MR 75.

⁶ L Genicot, *op cit*, p 270.

II

How was this arable land cultivated during the early Middle Ages? As far back as 1913 H L Gray noted the small, irregular fields of the lower Thames basin, so different from the large open fields of the midlands.¹¹ There the two- or three-field system prevailed. In Tottenham, if one accepts at face value the documentary evidence, there were as many as eighty-two fields, and many crofts and pightills besides, all the result of the slow clearing of the woods by individual families. Many of the fields bore a personal name, that, presumably, of the family who had made the initial clearance: Aylwynsfeld, Baldwyns, Collierscroft, Younsfeld, Pagesgrene, are examples.

In the paper Ian Murray and I published entitled 'A Fifteenth Century Middlesex Terrier',¹² we made an attempt to produce some order from this congeries of fields. Having noted that the 1459 terrier was divided into twenty-four sections, we compared the description of these sections, and the field names in each, with the map made in 1619 from the Dorset Survey. It quickly became clear that the twenty-four sections corresponded with twenty-four distinct areas on the map, these areas divided from one another by a system of lanes. (Apart from one or two new roads of the last century these lanes are still with us, forming the present-day road system, St Anne's Road, White Hart Lane, Lordship Lane, West Green Road, Broadlane, Green Lanes, and so on.) Each section contained several 'fields'. In only five out of the twenty-four were we unable to trace a clearly defined boundary. We judged that the twenty-four areas were the real medieval fields, the other fields subsections of them, but, to avoid confusion, called the twenty-four areas 'sections', which is in line with contemporary field-system

nomenclature when dealing with a region of this type.

Even so, twenty-four fields are very far away from the two- and three-field systems of the older textbooks. These tell us that common agriculture as practised in the Middle Ages must have had the following characteristics. Firstly, strip cultivation, each tenant having his land divided into a number of small scattered strips, of a half to one acre, intermingled with those of his fellows. Secondly, a fallow course at regular intervals, every other year in the two-field system, every third year in the three-field. Thirdly, the throwing open of the fields for general cropping of the stubble after harvest by the animals of the whole body of tenants. Finally, more or less even distribution of each tenant's strips throughout the whole arable area. For, in the absence of this last requirement, we are told, the peasants would periodically find all or most of their land fallow, with no crops, and be unable to sustain life.

How does the Tottenham scene, as revealed by the documents, fit into this? There were undoubtedly intermixed strips in the fields: we read of Nicholas Terry with two acres of arable 'whereof three rods in Homfeld, three in Wodecroft and half an acre in Longfeld'. Richard Taylor surrenders a piece of land 'lying in Longcroft between the land of Richard Brok on either side'.¹³ A fallow course every third year is frequently mentioned, usually in an incidental manner. There are, too, indications of the throwing open of the fields after harvest and of the meadows after mowing, after the feast of St Peter ad Vincula.¹⁴ It is when we come to even distribution of strips that we find a significant departure from the standard picture of the 'typical' manor.

From the 1459 terrier we learn that invariably any tenant with more than a few acres had his holdings concentrated within a relatively small section of the fields, fairly

¹¹ H L Gray, *English Field Systems*, 1959, p 402.

¹² D Moss and I Murray, 'A Fifteenth Century Middlesex Terrier', *Trans London and Middlesex Arch Soc*, XXV, 1974, pp 287-8.

¹³ *Tottenham Manorial Rolls* (after, TMR), I (Borough of Tottenham, Libraries and Museums, 1956) p 2.

¹⁴ Bruce, MR 47, mem 7.

close to one another, though not necessarily adjacent. How then, could the usual medieval rotation system function? It has often been assumed that distribution of holdings throughout all the fields was essential, if rotation was to be achieved.

The clue enabling Ian Murray and me to solve the puzzle was provided by the researches of Professor D Roden into medieval farming in the Chilterns and parts of Hertfordshire and North Essex.¹⁵ There, too, were the same numerous smallish common fields that we found in Tottenham, ten, twenty, even as many as thirty in a single township. In them, too, the holdings of individual tenants were confined to a small part of the total area. But Dr Roden found evidence, which we do not have for Tottenham, showing how the fields were sown. This evidence makes it clear that in the later Middle Ages an extremely complex system of rotations was operating, several different rotations existing side by side, one individual field, even, providing a unit of cultivation. Complicated permutations of the rotations, varying from year to year, ensured that no peasant, however localized his holding, could have all his land fallow in any one year. All this activity had to be co-ordinated so that there was uniformity in the throwing open of the fields for common pasturing, which speaks well for the capacity for social organization of, doubtless, uneducated medieval countrymen. While for Tottenham the records are not so complete, it seems probable that this was the agricultural system of the township and the one which, probably, operated throughout the lower Thames basin.

III

At the close of the fourteenth century we find in Tottenham an economy which was mainly arable, producing wheat, oats, and some barley by means of a complicated system of rotations. Some cattle and a large number of

sheep were reared. The lords, now three since the sub-division which took place in 1254, sold varying quantities of hay and timber, produce of their demesnes. But the greater part of the demesnes, the home farms, had long been leased to tenants in, mostly, small parcels. True, John Northampton, lord of the Daubeney manor, had in 1392 tried to restore some demesne cultivation with the accompanying labour services, but the experiment seems to have been a failure. It was not repeated.¹⁶ For the tenants, some 120 or 130 in number, that is, a total population of five to six hundred souls, were not docile. Though living under a comparatively easy regime, they were ever ready to assert their rights in the manor courts. Quite apart from the unrest prevailing in the years immediately preceding the great rising of 1381, we have several instances of refusal to perform services, of villein flights from the manor and other manifestations of independence. They were by no means a ground-down bunch of docile helots.

There is an implication arising from the division of the manor between three or more lords, and the fact that many tenants held land in more than one of these manors. As the territories of the different manors were, to some extent at least, intermixed, it follows that this was one of those manors where Postan and Titow assume that there must have been some joint body of tenants who arranged the agricultural programme. None of the three manors could have done this individually. There is no written record, anywhere, of the deliberations of such bodies, but some economic historians at least are sure they must have existed. (Fifteenth-century documents tell of co-operation in a 'fraternity', which possessed a chest looked after by two 'custodes', but this, of course, would have been a social or religious, not an economic, association.)

Before proceeding to relate the changes

¹⁵ D Roden, 'Demesne Farming in the Chiltern Hills', *Ag Hist Rev*, XXII, 1969, pp 10-23.

¹⁶ D Moss and I Murray, 'Land and Labour in Fourteenth Century Tottenham', *Trans London and Middlesex Arch Soc*, XXIV, 1973, pp 213-14.

which the coming of the fifteenth century brought to the village, let us visualize the characteristics of the English rural economy as a whole in the later Middle Ages. To begin with, after the three great outbreaks of plague in the fourteenth century the population fell catastrophically. After the plagues attempts were made by landlords to restore the status quo, by statutes whose aim was to keep wages down, and by intensifying services due from the tenants. These efforts, generally speaking, failed; R H Hilton believes because of the stubborn resistance of the English peasants and labourers. Domesday cultivation had what Bridbury visualizes as its Indian summer, which fitfully maintained it till the mid-1370s because a succession of poor harvests sustained grain prices.¹⁷ Once harvests became plentiful demesne farming for the market became quite uneconomic. Higher grain output with fewer mouths to be fed, high wages, falling profits, recalcitrant peasants, flights of labourers from the land, all combined to produce demesne leasing at an accelerating rate in the last years of the fourteenth century. In general there was a contraction of the total arable area cultivated.

Demesnes might be leased to manorial officers, to the whole village community, or to individual peasants. Prosperous peasants were increasing in number. Whereas in the thirteenth century, according to Postan, half the peasants held eight acres or less and only 3 per cent held more than thirty acres, as the fifteenth century progressed a different stratification appeared. There were fewer small peasants and, on the other hand, many hardworking and acquisitive individuals were adding acre to acre, frequently accumulating a hundred acres or more; Postan calls them an English *kulak* class. Concurrently, villein tenure was gradually evolving for all peasants, rich and poor alike, into a free copyhold tenure. With food prices low and wages high we may still accept, by and large, Thorold

Rogers's description of the fifteenth century as the 'Golden Age' of the English labourers. Not till the last quarter of the century did rising population, rising prices and, in some areas, enclosure of land for pasture, contrive to erode this prosperity.

Meanwhile, within the confines of open field husbandry many modifications and improvements were being made in arable farming. Improved rotations appeared, incorporation of legumes into the rotations, for instance; leys were introduced, single sections of fields became cropping units, scattered holdings were consolidated into a single large area. Finally, in many rural areas, including northern Essex, the numbers engaged in manufacture increased, participating in the expanding manufacture of woollen cloth. And this led to much rearing of sheep for their fleeces in all the pastoral country. In what respects did life in Tottenham resemble, and in what differ from, this general pattern?

IV

From the commencement of the fifteenth century there were great changes in its life, and it is proposed to list these in some detail, under seven heads.

Firstly, there was the increasing intrusion of Londoners into the village. The purchase of land in Tottenham by Londoners was of long standing. The buying of land in the surrounding countryside by dwellers in towns, whether for investment, for farming (in the modern sense) or to secure a country residence, perhaps as an escape from the plague, was quite common. Sometimes whole manors might be purchased, as, indeed, by John Northampton, John Gedeney, Adam Fraunceys, and others in Tottenham and district. This might be done as a means of social advancement and could result eventually in the rise of a new noble house. The Russells, the Osbornes, the Pulteneys, the Cecils furnish examples of this. These were exceptional men. We are concerned

¹⁷ A R Bridbury, 'The Black Death', *Econ Hist Rev*, 2nd Ser., XXVI, 1973, pp 577-92 *passim*.

with small-scale purchases, designed probably to obtain a secure investment, easily negotiable, based on the rent of land. Sylvia Thrupp mentions Edmonton and Enfield as favourite Middlesex locations where citizens bought country houses, manors and plots of woodland, pasture and agricultural land.¹⁸ She might well have included Tottenham also.

From 1400 there was not just an acceleration of this process in Tottenham but also, one might say, a qualitative change. The documents reveal that between 1413 and 1450 members of various London crafts, listed below, purchased land there, and at this point I should like to observe that these figures are minimal. So often a man would be mentioned several times before it was felt necessary to say that he was a draper of London, or whatever, that I feel sure there were a number of Londoners present of whom the fact was never recorded. The crafts mentioned and the numbers from each were: one armourer, one tailor, one mason, one saddler, one surveyor, one Chandler, one skinner, one baker, one sheerman, one hurer (cap-maker), one 'tymbermonger', one goldsmith, one capper, one carpenter, one draper, one mercer, two dyers, two barbers, two 'girdelers', two 'bruers', three curriers, and — ten 'bochers'. A total of thirty-seven craftsmen, ten of them butchers; a completely new feature.¹⁹ (In the 1450s four more butchers appear in the court rolls.)

Special mention must be made here of one outsider who did not come from London, Robert Holder, a drover from Yardley in Worcestershire, who in 1434 purchased 21½ acres of enclosed land from Richard Hertilpole, one of the butchers.²⁰ What was a drover from the midlands doing in Tottenham? Can we assume that already cattle from the midlands were coming on the

long trek to supply food for the London market? We know that this happened later, but in the early fifteenth century?

A factor which may have influenced citizens of London in the fifteenth century, and induced them to buy customary land in Tottenham, was the lords' formal abrogation of the right to require labour services, apart from a few connected with haymaking. The labour services had not been particularly heavy; the holder of an entire virgate could be required to plough only 4½ acres. In practice, by the late fourteenth century they were in any case commuted. Nevertheless, it still theoretically rested with the lord whether he demanded such services, and it will be recalled that John of Northampton briefly tried to enforce them.

It must have been felt advantageous to the tenants, therefore, when in 1407, in return for an increased rent of 7d an acre, the lord of Bruce manor agreed to the following. The tenants 'should pay to the lord and his heirs for their tenement and for each acre of land which they hold from him, 7d for all rents, services and works except suit of court and mowing and haymaking and carriage and stacking the lord's meadow according as it was by ancient custom'.²¹ This entailed an increase from 4½d to 7d an acre. As was usual, work on the meadow persisted longer than other services. By 1437 this arrangement obtained throughout all the manors, as a court roll of that year makes clear by listing in full those tenants who were obliged to perform these sole remaining labour services.²²

Secondly, in fourteenth-century Tottenham, as everywhere, one meets with instances of peasants being fined for overburdening the common pasture or wood with their beasts. Generally two or three bullocks were mentioned; once even twelve were implicated. Quite frequently scores of sheep were being introduced by guilty

¹⁸ Sylvia Thrupp, *The Merchant Class of Medieval London*, Chicago, 1962, pp 118, 284–6.

¹⁹ These details are to be found in *Bruce*, MR 33, 34, 35, 37, 38, 39, 43, 47, 48, 67.

²⁰ *Bruce*, MR 33, mem 8.

²¹ *Ibid*, MR 10, mem 29.

²² *Ibid*, MR 33, mem 10.

persons. In the following century the pattern soon altered. As early as the reign of Henry IV Henry Cook, who may be described as the pioneer London butcher, is frequently mentioned as trespassing with seven, eight, even fifteen and seventeen bullocks.²³ By the 1430s, 1440s and 1450s where figures are given, the cattle overburdening ran into the thirties and forties. Sheep still appeared in the court rolls; more than a hundred in excess of the permitted number were ascribed to such butchers as John Johnson and William Fowler, 220, even, to John Crok.²⁴ One must on no account fail to mention the heinous offence of Thomas Eloy, butcher, who 'overburdened the common pasture of the lord beyond his tenure and, under cover of the said tenure which he holds, pastured diverse animals of diverse men under his own name to the grave hurt of the lord and tenants'. How many beasts of how many fellow-butchers Thomas Eloy imported into Tottenham we do not know. We do know, however, that for this presumably serious transgression the fine was 12*d*. Did the lord and community really wish to prevent it?²⁵

Thirdly, there is evidence of an increase of pasture at the expense of arable land. When in 1392 John Northampton became lord of Daubeney manor he had a list made of all those to whom portions of his demesne were leased and the acreage each farmed. In all, 155 acres were leased for the total sum of £2 11*s* 7*d*. The greater part by far of this was arable.²⁶ By the 1440s the greater part of the leased demesne of the now reunited manors was used as pasture. The total rent obtained in 1440 by John Gedeney was £34; only about £2 of this was for arable. Downhills, Bradwater, Wodereding, and Stonyfeld, all under crops at the opening of the century, were designated pasture in the 1440s.²⁷ It does not follow that there was a trans-

formation of the land of the tenants on such a scale, but references to customary land described as pasture do increase as the century advances.

Fourthly, there was an increase of enclosure. There are a few references to this in the reign of Richard II. For instance, Pagesgrene and Parkfeld were already enclosed.²⁸ As the years went by references to crofts and closes in the court rolls progressively rise. Land transfers in the reign of Henry V mention nine crofts and closes among the holdings sold. In the first eleven years of Henry VI twenty-five are recorded, in the second eleven years thirty-nine.²⁹

More frequent, too, are references to attempts at enclosure. Only four instances occur under Richard II, all four being attempts by manorial lords, Twyford, Cavendish, Northampton, and Innocent, and every time it was ordered that the land become common again.³⁰ (The custom of the manor overruled the will of the lord.) But by 1411 a different attitude prevailed. For enclosing Mockynsfeld with hedges and ditches Henry Thornton was fined the trivial sum of 2*d*.³¹ And be it noted, there was no reference to removal of these hedges and ditches. There are two references to attempts at enclosure under Henry V, with fines which can only be called derisory. In the next reign the attempts multiply, apart from many cases of enclosing of stubble. John Johnson, 'bocher', encloses four acres in High Hanger, Thomas Hancock encloses common pasture at Marklan, Richard Hertylpole, most important of the butchers, encloses Redland, Hillfeld and Catteslond, one of the Edrych family encloses twenty acres.³²

Incidentally, as Mingay emphasized when discussing similar piecemeal enclosure in the eighteenth century, this continuous, relatively small-scale enclosure illustrates the flexibility

²³ *Ibid*, MR 27, mem 26.

²⁴ *Ibid*, MR 43, mem 36, MR 47, mem 23, MR 67, mem 14.

²⁵ *Ibid*, MR 34, mem 4.

²⁶ *TMR*, 11, p 122.

²⁷ *Bruce*, MR 10, mem 4, MR 27, mem 16.

²⁸ *TMR* 11, p 147.

²⁹ *Bruce*, MR 33 *passim*.

³⁰ *TMR* 11, pp 179, 307, 323, 326.

³¹ *Bruce*, MR 27, mem 8.

³² *Ibid*, MR 34, mem 6.

of the traditional farming system. The older collective system of agriculture seems, for the time being, to have survived the removal of those of its parts which became privately owned, but it was being undermined nevertheless.

Fifthly, as the fifteenth century advanced there was much consolidation of holdings. The 1459 terrier indicates that, although many one-acre or two-acre strips survived, there were also thirty-four parcels of ten acres or more, several of them closes. The largest was the 200-acre enclosure which the Prioress of Clerkenwell held in Hanger.³³ At the same time there was a growing gap between the larger and smaller tenants. The larger included a number of ecclesiastics. The Prioress of Clerkenwell held, in all, 260 acres of free land, the Dean and Chapter of St Paul's 220 acres, the Prior of Holy Trinity, Aldgate, thirty-seven acres but also nine parcels where the terrier fails to give the area, the Prior of the Carthusians had forty-six acres and two parcels of indefinite area. Among the laymen John Drayton had amassed 185½ acres, John Pye 'of London' had ninety-six acres, Robert Stubbe eighty-one acres, John Foulmer, a London butcher, sixty-one acres. The Edrych family, one of whom was described as 'a bruer' of London, and another as 'of Iseldon', held between them 155 acres plus two indefinite parcels.

There was much investment in house property by a few individuals. Peter Caldcot, 'of London', had six properties and one of the inns. John Drayton and John Newman senior, four cottages apiece, John Pye 'of London' ten cottages, two tenements, two messuages and an inn, Robert Stubbe a tenement, a messuage and three cottages.

At the other end of the spectrum we find that of the 120 tenants (or 114 if six of the names are variant spellings of other names), thirty-seven had four acres or less and ten of these nothing but a cottage. As far as one can tell from the incomplete details of the

fourteenth-century holdings there was no such great disparity then. Fortunately for them there must have been no lack of work for these poorer peasants as servants of the richer or in the industrial occupations which we shall come to later. But it will be seen that, with respect to peasant stratification, Tottenham does not resemble the normal pattern.³⁴

Sixthly, in 1410 we have the first mention of Totenhamstrete.³⁵ This was to become quite quickly the principal village centre, straddling the high road near to the Edmonton border and over half a mile from the village church. W G Hoskins and others have pointed out that it was common in the Middle Ages for villages to be moved to the high road, leaving behind a more or less isolated church.³⁶ There appears good reason to believe that the Tottenham village was moved about the year 1410, and that somewhere in the neighbourhood of Bruce Castle there lies a buried village awaiting the hand of the archaeologist to reveal it.

The high road was, and is today, one of great importance, a main artery into and out of London. There must have been a continuous flow of people and goods along it, on foot, on horseback and on cumbrous wagons. Along this road must have come supplies of food and other necessities for the already great city. Perhaps the ease of travel of those using it was facilitated by the Crown's efforts to improve the highway, in the 1360s, '70s and '80s, between the church of Shoreditch and Edmonton. 'It was so deep, muddy and dangerous that men, horses and carts can scarcely pass by it.' So a penny a week was to be paid by every cart called a tranter, and a farthing a week for every pack horse, to obtain funds for necessary repairs.³⁷ (Incidentally, similar efforts were

³⁴ D Moss and I Murray, 'A Fifteenth Century Middlesex Terrier', *op cit passim*.

³⁵ Bruce, MR 27, mem 13.

³⁶ W G Hoskins, *Local History in England*, I, p 205.

³⁷ *Calendar Patent Rolls, 1364-67*, pp 88, 190; 1367-70, p 217.

³³ *Ibid*, MR 75.

made in the first part of the fifteenth century to improve the passage of the River Lea from Ware to the Thames, 'being a great river by which boats used to go down and would still do so but for faulty weirs, mills, stumps and kidells therein.'³⁸

Road repairs and consequent increased traffic may have been the cause of this removal of the village which I have postulated, so that advantage might be taken. It is interesting to see that at the same time we find in the court rolls the first mention of common lodging-house keepers and of common huxters, at first described as selling ale, but later on as selling ale and other commodities, sometimes as selling oats, wheat and other articles.³⁹ All this is of significance for the general picture of Tottenham, as it then was.

Finally, we come to the consequences of John Gedeney's acquisition, and eventual union of several Tottenham manors. Gedeney was a wealthy member of the Drapers Company, one who was alderman and mayor of the City of London and who represented it in the House of Commons. It would also seem that he was an excellent man of business. Within a few years of his becoming in rapid succession lord of all the manors, Bruce, Daubeney, Pembroke, and the large sub-manor of Mockyng, he succeeded in raising the manorial surplus to hitherto unheard-of heights. Surpluses of over £100 a year were continuous in all surviving accounts between 1433 and Gedeney's death in 1449. During Henry V's reign the combined surpluses of Bruce and Daubeney were less than £40, and while we possess no compotus rolls for Pembroke it seems unlikely that it would, by itself, have yielded as much as this. Mockyng was a very small manor and must have produced a correspondingly small income. Yet in some years after Gedeney had become lord surpluses of £120 and more were

realized, probably representing a rise of more than 50 per cent over the figures of twenty years earlier.⁴⁰ All this at a time when, it is believed, estate incomes in general were falling. Moreover, these revenues provide a sharp contrast to the situation in neighbouring Hackney, where, from the 1380s, a steady decline in manorial yield had set in. It must be added that three accounts surviving from the 1450s, after the death of Gedeney, show Tottenham manorial surplus falling somewhat, and large arrears re-appearing. Even so, much was being spent on repairs to the fulling mills and on a new oven for the brickworks (MR 52, 64, 65). (The first record, as soon as Gedeney became lord, of payments to an accountant, may well be an indication of tougher control of finance. These payments rose from 53s 4d to £9 per annum.)

Gedeney very quickly raised his tenants' rents. He leased the demesne in some years as a unit, in others in a few very large parcels and at a greatly increased and increasing rent, as we have already seen.⁴¹ He succeeded in eliminating arrears in the payments of his bailiff, surely a sign of tough administration.⁴² Sales of timber began to be supplemented by large sales of hay from the late 1420s, these rising to £24 10s 0d in 1450. A brickworks appeared,⁴³ and a fulling mill joined the older water mill which had ground the manor's corn.⁴⁴ Later a second fulling mill was added. For many years London drapers had been wont to make use of the several fulling mills along the Lea.⁴⁵ Gedeney, it seems, decided to install his own mills on his estate. Yet another connexion with industry is found in several references to a malting house, jointly owned by a number of

³⁸ *Calendar Close Rolls*, 1413-19, p 516.

Calendar Patent Rolls, 1416-22, p 78; 1422-29, p 402; 1436-41, p 371.

³⁹ *Bruce*, MR 26, mem 2, MR 27, mem 11; MR 47, mem 26.

⁴⁰ *Ibid*, MR 10, mems 1-13.

⁴¹ *Ibid*, MR 10, mem 11.

⁴² *Ibid*, MR 10, mems 1-10.

⁴³ *Ibid*, MR 10, mems 3, MR 52.

⁴⁴ *Ibid*, MR 10, mem 9, MR 64.

⁴⁵ K G T McDonnell, *Economic and Social Structure of Bromley, Hackney, Stepney and Whitechapel from the Thirteenth to the Sixteenth Centuries*, unpublished Univ London PhD thesis, 1958, pp 97f, 170.

tenants.⁴⁶ Messrs Whitbread inform me that this may have been supplying malt to brewers who did not possess their own malt supply and, indeed, there is at least one reference to malt being sold to a London brewer.

A man of Gedeney's type would be likely to encourage all attempts at more efficient farming and more profitable use of land, not worry overmuch about enclosure and welcome citizens of London who might have progressive ideas. He was an active agent in promoting the great changes Tottenham underwent in the first half of the fifteenth century.

V

Great these undoubtedly were. I visualize Tottenham in 1450 and 1460 as a very different place from what it had been in 1400. Situated on a busy high road, with common lodging houses, six inns, embryonic shops (if that is what is meant by the term 'common huxters' — actually, in the 1450s, there are references to shops),⁴⁷ it must have been continually subject to outside influences. References in the court rolls to 'tenants and residents'⁴⁸ suggests, even if some of these residents were transients, that the population may have been much greater than would be indicated by the 120 tenants and their families. I imagine it must have been a very bustling village. There is even evidence from 1440 sad to relate, of brothels, 'bordel houses', where 'men of evil fame and evil governance come by night and day to the hurt of the neighbours'. One was kept by a Thomas Aylmer, and a lady rejoicing in the name of Joan Christmas seems to have been the main attraction.⁴⁹ Aylmer was, indeed, one of the principal tenants, serving on juries and inquests. Perhaps his fellow tenants privately thought he provided a useful

amenity. A second brothel belonged to John Baldwyn, after 1450 the lord's bailiff.

As is to be expected in such a main-road community, a money economy was well established. There are many statements as to the sums of money involved when customary land changed hands, the instances rising from six during the reigns of Richard II and Henry IV combined, to seven in the reign of Henry V and twenty-two in the first twenty-one years of Henry VI. Whether this rise represented a rise in money transactions or a more frequent need to have the transactions registered by the court I do not know, but probably the latter is the likelier explanation. A great deal of borrowing of money for different purposes went on: for instance, in a single court held in 1450 there were eight 'pleas of debt'. Geoffrey Hancock sued John Baldwyn for 11s 3d, Richard Turnaunt sued Robert Floocher for 34s 4d, John Sawyer sued Ralph Bagley for 10s, and so on.⁵⁰ The peasants also must have obtained the money which they needed for various purposes either as wages or by selling surplus products on the market. And there were the numerous wives of tenants who brewed ale and, contrary to the statute, sold it by cup and glass. Familiarity with the use of credit in business transactions had obviously grown too, as borrowing to overcome a temporary cash shortage and the buying of land by deferred payments, a growing practice, make clear.⁵¹

It will have been realized, though, that the fundamental change in fifteenth-century Tottenham was the wide substitution of a pastoral for an arable economy. The evidence makes this undeniable. The rearing and pasturing of cattle and sheep for the supply of the London market was a major occupation. Why, otherwise, were all those butchers purchasing Tottenham land? We know that under the Tudors cattle-rearing was the chief

⁴⁶ TMR 11, p 221.

Bruce, MR 33, mems 7, 10, 12.

⁴⁷ Bruce, MR 10, mem 2.

⁴⁸ Ibid, MR 67, mems 12, 16.

⁴⁹ Ibid, MR 47, mems 4, 19, 25.

⁵⁰ Ibid, MR 47, mem 21.

⁵¹ D Moss and I Murray, 'Signs of Change in a Medieval Village Community', *Trans London and Middlesex Arch Soc*, XXVII, 1976, p 283. Many more instances than those mentioned in this paper occur in the succeeding reigns.

Tottenham occupation, that by the end of the sixteenth century Tottenham, by then practically all enclosed, was predominantly pastoral. I believe that the transformation was well under way before 1450. And it was not butchers alone who were engaged in cattle rearing. John Drayton, that long-lived gentleman, first appeared on the scene in the days of Henry IV, described as clerk and secretary to Roger Walden; before his death in 1459 he had entered the ranks of the gentry, had interests in other parts of the country and even in Ireland⁵² and, it will be remembered, held 185 $\frac{3}{4}$ acres of Tottenham land. He was fined for overburdening the common with as many as thirty-eight beasts.⁵³ He, like Henry Hebblethwaite later in the century, appears to have been a grazier on quite a large scale in addition to all his other activities.

The explanation for this change in agricultural activity appears to be as follows. Dr K G T McDonnell noted that in the fourteenth century many London butchers went into Stepney and Stratford to meet the droves of cattle coming into London from the eastern counties, to forestall, to search out and buy the pick of the bunch and to fatten their purchases on the Thames and Lea marshes.⁵⁴ No butchers appear to have gone to Tottenham then. But London continued to grow. It has been estimated that it rose from 35,000 inhabitants in 1377 to 67,000 in the early sixteenth century (the latter figure is from J C Russell, well known for his tendency to underestimate population). Very likely much of the increase happened in the late fifteenth century when population generally was rising again, but as London was all the time developing as a commercial city its population must have risen even in the earlier years of the century. And the falling prices of cereals meant more money was available for buying animal produce. Therefore cattle from the eastern counties had to be supplemented by cattle from the midlands. Some came

down Ermine Street, and London butchers in the fifteenth century went into Tottenham, perhaps into Edmonton and Enfield too, for the same reasons that had earlier induced them to move to Stepney and Stratford. They too were intercepting cattle, coming, this time, from further north, buying those they fancied and grazing them on the meadows of the Lea and Moselle. Remember also in this connexion the movement to the high road and the presence of Robert Holder, that Worcestershire drover, both facts of significance.

In conclusion: in many respects Tottenham's development in the fifteenth century differed considerably from that of the majority of English townships. The proximity of London with its demand for meat, the busy high road which passed through the manor and on which its main village was situated, the lush marshes on the banks of the Lea — and, one must not forget, the personality of John Gedeney too — were all factors contributing to this. Consolidation of holdings and the rise of a class of wealthy peasants were features, as elsewhere, but it was growth based on cattle-grazing and an over-all increase in prosperity, for the lord as well as these wealthy tenants, which are seen as the fundamental features. And all this was in marked contrast to neighbouring Hackney, where there was very little expansion, very little move from arable to pasture, not a great amount of enclosure even in the sixteenth century.⁵⁵ It would appear that while Hackney was in a backwater, on a route which led to nowhere in particular (the village was at the Mare Street Narrow Way, as it is called locally), Tottenham, in its small way, and perhaps temporarily, was in the mainstream of economic advance. Of course, whether this was advantageous to the average peasant family is another matter: this depends on whether one believes that economic progress is all.

⁵² *Calendar Patent Rolls*, 1422–29, p 411.

⁵³ *Bruce*, MR 43, mem 36.

⁵⁴ McDonnell, *op cit*, p 95.

⁵⁵ *Ibid*, pp 125f, 133, 257.

The Scarcity of 1800: A Contemporary Account

By SALIM RASHID

THE Revd Henry Beeke (1751–1837) was perhaps the earliest unofficial analyst of economic issues for governments in the nineteenth century. He was a close friend of several other prominent Tories, such as Nicholas Vansittart and J C Herries,¹ and his one published work consists of a critique of the methods by which the value of William Pitt's income tax had been estimated.² It is likely that this pamphlet led to a meeting with Pitt in Addington's house in 1800. Pitt asked Beeke for a table of prices of corn and meat; Beeke duly complied, and even supplied some rhymes, a subject in which he had heard Pitt to express an interest. Thereafter Beeke regularly provided advice on topics such as funding and paper money.³ In 1801 Beeke accepted the post of Professor of Modern History at Oxford, and, at the insistence of Addington, delivered the earliest known lectures on political economy at that institution.⁴

The document that follows is an extract from a memorandum sent to Addington by Beeke in October 1800, and was intended to assure leading members of the administration of the adequacy of the harvest of that year.⁵ The exertions of the war with France, when combined with the scarcities of 1797 and 1799, had excited the populace considerably — a poster at Bath read: 'Peace and Large

Bread or a King without a head'⁶ — and Beeke was concerned to allay alarmist fears. As much of our information regarding this period comes from Arthur Young, Sir John Sinclair and the Board of Agriculture, it is interesting to note Beeke's disrespect for these authorities:⁷

If we are to rely on such hasty guesses (to say the best of them) as Mr. A. Young's respecting the stock on hand last year, and Mr. C. Scott's respecting the prospects of supplying the deficiency from abroad, we shall be for ever alarmed, for ever regulating and legislating without any advantage to the publick. The busy and vain imbecility of Sir J. Sinclair and the strange assertions of Messieurs A. Young, Middleton and other Empiricks in political economy will best be appreciated, and their intentions most clearly comprehended by those who have read as much of their publications as I have done.

The extract below consists of about ten pages of a forty-page document. Beeke began by calling the deficiency of one-fourth in the crop, announced by the Duke of Portland,⁸ to be 'demonstrably, if not self-evidently erroneous'. In a detailed account, Beeke argued that although there had been local failures, there was no general deficiency. He wrote as though he had direct knowledge of Hampshire, Dorset and Wiltshire; he was informed of the crops in the eastern counties by a friend, and of the north of England and Scotland by Nicholas Vansittart, both of whom had just concluded extensive tours of these areas. Beeke firmly believed that the apparent dearth was caused by rumours of a real dearth, and proceeded to give a detailed account of affairs in his own parish to show

¹ This biographical note is based on a reading of the Herries MSS at the British Library and the Sidmouth Papers at the Devon Record Office. Beeke's name is variously spelled Beek, Beck, Beak, Beake.

² *Observations on the Produce of the Income Tax*, 1800. This pamphlet was praised by J R McCulloch and Robert Giffen.

³ Devon RO: Sidmouth Papers.

⁴ W R Ward, *Victorian Oxford*, 1965, p 50.

⁵ Devon RO: Sidmouth Papers, hereafter referred to as *Memorandum*. It consists of forty handwritten pages.

⁶ Quoted by W F Galpin, *The Grain Supply of England during the Napoleonic Period*, New York, Macmillan, 1925, p 19.

⁷ *Memorandum*, p 25.

⁸ For further details, see Galpin, *op cit*, ch 2.

how such false opinions could be generated.⁹ 'You may possibly think this statement too minute,' Beeke told Addington, 'but it is scrupulously correct and I produce it as an example of the way in which Market Conversations, and vague opinions hastily disseminated, operate on Men of whose Honesty and Candour I have not the smallest suspicion.' In order to provide an objective account, Beeke then provided the following details of the entire wheat-growing season and concluded by urging that Britain follow the lead of Holland and form a free-trade emporium.¹⁰ It would be interesting to know what Beeke thought of the Corn Law of 1815!

Henry Beeke on the Scarcity of Corn
Ufton Oct. 23rd, 1800.¹¹

Undoubtedly during the month of September the Markets were almost everywhere very scantily supplied; and undoubtedly a great alarm has been excited as to the deficiency of the present crop; but which I must say I believe to have originated chiefly in London. Certainly it has been more general, was more *early*, is as ill-founded and has had more influence on the Markets in the Neighborhood of the Metropolis than in counties more distant.

This very scanty supply of the Markets must chiefly be attributed to the unprecedented

deficiency of last year's crop both in quantity and quality. And the complaints (where honest) may be easily explained by considering the History of the weather from seed time to Harvest.

There is an old proverb that *in England a dry Summer never begs its bread*, and there are others of the same import. Assertions can never become proverbial without an original foundation in Truth. I do not think that the effect of Seasons is as yet revolutionized; and it cannot be denied but that in consequence of almost ten weeks of very uncommonly hot and dry weather, the people in general, Farmers as well as others, relied on their good old Proverb and expected the whole a plentiful harvest, wherever the wheat had not suffered from the severity of the Winter. The *early* thrashing has not in general by any means answered to these very sanguine expectations, and if we consider the progress of the Vegetation of this year's crop the reasons will be easily understood.

The seed-time last year was very unfavourable to cold, wet, deep soils in general; much wheat was sown very late, on lands half drowned, and not half cleaned. So far, considerable failures might be expected; But I apprehend that a very ample set-off against all these failures may be found in the unprecedentedly great quantity of wheat which was sown on the dry lands; and

⁹ *Memorandum*, p 12. In a paper on the scarcity of 1800 drawn up by Warren Hastings, ex-Governor-General of Bengal, the influence of expectations on market price is repeatedly made. This paper is also at the Devon RO.

¹⁰ In the section immediately following the extract below, Beeke provides the first known description of a 'Giffen good'. See my note 'The Beeke good: A note on the origins of the Giffen good', forthcoming, *History of Political Economy*.

¹¹ The opinion of Thomas Tooke in his *History of Prices*, 1823, is worth noting as the better-known view of the scarcity of 1800:

The season of 1800, after a cold, backward spring, assumed rather a favourable aspect, the early part of the summer being dry and hot; but the promising appearances were soon changed into the dismal reality of renewed or continued scarcity. A small part only of the crops was got in before heavy and almost incessant rains

began. Of the wheat, that part which was secured in the southern districts of the island before the rains commenced, and therefore in good conditions, proved to be light, coarse, and unproductive: this was the quality of the grain generally. But the rains which came on in August caught a considerable portion of the wheat still in the fields, even in the home and some of the southern districts, and injured the whole of the crops in the northern parts of the island.

Bad, however, as were the crops in England, they were still worse in Scotland

For an account of the measures taken by the government during the scarcity of 1795-96, see W M Stern, 'The Bread Crisis in Britain 1795-96', *Economica*, May, 1964. The scarcity of 1800 had one good effect: it forced the government to call for a general census. M J Cullen, *The Statistical Movement in Early Victorian Britain*, New York, 1975, p 12.

especially after Turnips. This part of the crop being left in danger from the wet, being in general on land well manured by sheep, and well cleaned is I believe allowed everywhere to be very good.

Though in some of the cases before mentioned, I also found slugs and other reptiles, there were many spots in every county which were thin, yet this was far from being generally the case; and in some counties particularly where much Alarm has been excited, the complaint is that hopes have been disappointed which could not have been raised if the ground in general had not been sufficiently covered with Plants. I have often known the Wheat much more generally injured during the winter, when it has been forward, or what is technically called *Winter-proud* and has afterwards felt the effects of severe frost in the spring.

About Easter the appearance was far from bad, but afterwards, the ungenial weather in the month of May threatened almost a future famine. The month of May is one of the critical periods in the growth of Wheat, being the time when the ear is first formed within the sheaths of the surrounding leaves; though it is still some weeks afterwards that it shoots, or becomes visible to the eye. The future *length* of the ear depends very much more on the weather at the time of its formation than may be generally apprehended: and accordingly this year it was I think a common remark that the ears were short, though in most places numerous and full. If you examine ears of wheat as I have described, you will find that the lower part of the Rachys (to use a botanical term), that is, of the upper part of the stalk on each side of which the grain is freed is destitute of florets; And in *cold* summers, the florets in the upper part of it are barren. But the produce of a crop of wheat may be very considerable though the ears are short, because it depends chiefly on the number of fertile florets within each Calyse; or Chest, as in this Country it is principally

called. In general the corn is judged to yield a full average produce when each of these contains three grains excepting the terminating ones which seldom have more than two. Last year the ears in general were somewhat longer than this, but whole fields together had one side of the ear almost entirely barren, and the average number was seldom to be found; this year, even in Crops of which great Complaints have been made, the average number is at least as much exceeded, excepting on stiff clay lands, as at Mortimer, which were almost baked to brick. I have in my Parish a field of that sort which was badly killed and which, though good wheat land, the produce will not be two Quarters an acre.

From the first week in June to the second, and in many places the third, week in August no weather could be more favourable to the wheat. Great heat in the air with abundant moisture in the ground caused during the month of June a most luxuriant vegetation; the lateral shoots advanced more rapidly; and the crop was in general more even and erect (two very important circumstances) than I have known for several years.

The blossoming time of the whole crop, and also the kerning time of the early wheat was allowed without any contradiction to be the finest that could be wished for and certainly nothing happened to interpret the pleasing expectation occasioned by it till about the second or third week in August.

About that time, and not before, the blight of the straw made its appearance in many places, especially in the southern and Midland Counties (North of the Trent it is not complained of). I believe that those who have an opportunity of inquiring respecting former seasons will find that this blight usually succeeds to very hot and close weather, without wind, in the month of July, and abates somewhat of the general in the prospect of an abundant crop.

When it happens early, and before the grain is renned, or ceases to be milky, it is exceedingly injurious. The *number* of grains depends on the weather at the time of blossoming, but they become shrivelled and contain little flour when a blight comes on before they are sufficiently advanced towards ripeness.

But this year it was not at all complained of till *after* most of the wheat was already ripe, and for the greater part was already so much advanced as to require but little more aid from the circulation through the stalk. I went into Devonshire the first week in August, and heard nothing of it before I set out, and saw nothing of it on the road, unless on some high lands near Axminster, I was frequent in my inquiries afterwards; and the accounts of farmers themselves were uniformly good till about a fortnight afterwards when I found that the blight was very general in Cornwall, and that they were cutting their wheat as fast as possible. It is a fact well understood by practical farmers, that, if the wheat is cut as soon as the blight appears, though the grain shall be quite soft, and the straw yet green, yet the mischief is in great part prevented.

If this blight had really been so generally injurious the calamity would have been known much *sooner*; the price of wheat would not have fallen in August; the new wheat *could* not have been the fullest-bodied, fairest, and heaviest, that has been seen for some years in the markets. But these facts respecting it are not I believe anywhere questioned, so far as concerns the great bulk of this year's produce.

But the following observations will account for a great part of the present alarm.

It happens to most farmers from a very obvious necessity that the latest wheat in the barn is the *first* which must be thrashed. The Ricks are usually made during the busy time of the harvest, and the late wheat lies uppermost in the barn (unless a particular

arrangement is made for the sake of seed) and must be thrashed before the rest can be got.

This year the *late* wheat in the South of England was certainly in many places injured by the blights, and at the same time the straw, in general, was long. From a combination of these circumstances such wheat cannot be productive in proportion to the time which takes in thrashing. When the ground of the complaint is that the heap in the barn does not answer to the labour employed, the way to get at the truth is not to rest satisfied with being told that a days work only produces two or three bushels, but to ascertain the *comparative* quality of the crop which is thrashing; and the actual produce by the acre. I have known a very scanty crop thrashed at the rate of more than a sack a day when the straw has been short, and the grain slightly swelled by showers before cutting and my thrasher has just now told me that he has worked to procure two bushels a day in an instance where the produce was full four quarters an acre.

From all this information therefore, and from my own attentive observations, I must repeat my full persuasion that; throughout Great Britain collectively, there will at least prove an average crop, though the present thrashing may in some instances fall short of it.

It will not be so bad as might have been expected in May, neither will it be so abundant as the very fine weather afterwards, especially during the blossoming and kerning time, induced many sanguine persons to flatter themselves. It has undergone extreme vicissitudes, and the number of cases where it is either very bad or remarkably good are greater than usual; but will nearly balance one another.

As to the scanty supply of markets which lasted during a part of September, this must be attributed *exclusively* to the unprecedented

deficiency in last year's crop both in quantity and quality, so that the barns and graineries, of the farmers were almost totally exhausted.

The farmers in general wish to sow old seed, if they can procure it of good quality; but this year the old was too bad, and enough does not remain which is fit for their purpose.

The harvest usually lasts about six or seven weeks, (about an eighth part of the year) with so full employment that very little of any kind can be thrashed.

Of the wheat produced about a seventh or eighth part is again returned to the earth for the average produce may be estimated at between 20 and 24 bushels, and the average of seed used is rather less than three bushels.

The proportion of the barn room, and thrashing floors, to farms, is generally such as to require constant employment for almost ten weeks in making off the crop. The wheat generally requires about 6 or 7 days per acre for one man, or 4 when two thrash together, and, according to the usual proportion of buildings to farms of larger size, *cannot* with every exertion be conveniently thrashed by less than half a years labour.

Hardly any other new seed will be used this year; and, if all the seed were new, it would for the reasons just mentioned require between three and four weeks full labour to provide it, even if all the barns used for wheat were employed for that purpose only.

But the full labour I speak of could not begin this year till the first week in September. During the month of August the markets were very scantily supplied because the farmer's stores were generally exhausted. During the month of September they could not be fully supplied with bread (corn) because the whole exertion in thrashing would be largely adequate to the demand for seed, and hardly any old seed has this year been anywhere remaining.

Many farmers indeed are not able so to manage as to thrash the part of their crop which is fit for seed for the reasons which I have already mentioned; and they supply a scanty proportion of the bread corn. But, even to this time, I am assured that at least two thirds of the present abundant quantity brought to market is sold for seed.

In this county certainly, and as far as I can understand everywhere else excepting London the markets have been remarkably *full* ever since the beginning of October. And he who supposes that the corn could so soon have come in such quantities to market, if the crop had really been unproductive must be very little acquainted with the Rural Economy of this kingdom.

The present state of the markets in the country is, to me, a demonstration that the state of crop has been greatly misrepresented; I think the language of the farmers is very evidently changing; and I do not doubt but that the greater difficulties of the present year are already surmounted.

NOTES ON CONTRIBUTORS

(continued from page 89)

and the history of economic thought. Within the history of economics his chief interest is in the inter-relationship between Anglicanism and British Economic Growth. He has published in *Econometrica*, *History of Political Economy* and other journals.

A R Wilkes completed his PhD at the University of

Reading in 1975. Following a period of teaching in Cornwall he is now Head of History at Normanton Freeston High School, West Yorkshire. His present research interests are a study of livestock prices in nineteenth-century England, and he is also undertaking a project for the Historical Association, introducing children to historical skills by using portraits of Queen Elizabeth I.

Field Under-Drainage Before and After 1940*

By F H W GREEN

THE extent of under-drainage of agricultural land in England and Wales was discussed in this journal fourteen years ago by Sturgess,¹ and his contribution was commented on by Collins and Jones² and by Phillips.³ It was concluded that we did not really know the extent and distribution of under-drainage activity in the nineteenth century, or before.

It is possible to quantify the extent and distribution of drainage effort in the UK since the introduction of the present system of government grants in 1940. It can be safely assumed that the vast majority of drainage schemes since 1940 have been grant-aided, and therefore statistics based on the grant allocations omit drainage data on very little more than the few farms classified as 'charities' (eg experimental farms) which are not eligible for the subsidy. Maps have now been produced of the extent of post-1940 under-drainage.⁴

In other western and northern European countries available drainage data vary, and they cannot be exactly compared with the UK figures because either (i) they are in respect of different periods, or (ii) they refer to all

under-drainage which has ever been undertaken. Countries in the second category include Czechoslovakia, Denmark, France, and Sweden; but even in these cases the terminal dates are different, although they are within a few years of 1970.

To facilitate comparison of the UK with at least the last-mentioned countries, it was clearly desirable to attempt to assess the *total* area under-drained here. Fortunately it is now possible, as explained below, to attempt to do this.

From 1971 onwards, MAFF inspectors, when approving grants for under-drainage, have been required to fill in forms to give particulars, *inter alia*, concerning the reasons for the applications, and, where known, the past history of drainage. As regards reasons for the applications, one is 'failure of old drains', which may be taken to be pre-1939 drains. As regards drainage history, the coding is:

- (1) Old drains present but not working.
- (2) Some old drains still working and either draining part of the field or being incorporated in the new work.
- (3) No evidence of old drains.

All the coded information is fed on to magnetic tapes, but the very considerable amount of information there stored has not all been printed out. In particular, even in the very full print-outs which were made, parish by parish, for the first three years of the scheme, codes 1 and 3 are added together, although for the purpose of assessing the total amounts of past drainage, it is desirable to have 1 separated from 3.

From the 1972/73 print-outs, Fig 1 was constructed, showing, by Divisional areas, the percentage of applications in category 2.

¹ R W Sturgess, 'The Agricultural Revolution on the English Clays', *Ag Hist Rev*, XIV, 1966, pp 104-21.

² E J T Collins and E L Jones, 'Sectoral advance in English agriculture', *Ag Hist Rev*, XV, 1967, pp 65-81.

³ A D M Phillips, 'Underdraining and the English claylands 1850-58', *Ag Hist Rev*, XVII, 1969, pp 44-55.

⁴ F H W Green, 'Recent changes in land use and treatment', *Geog Jnl*, CXXXII, 1976, pp 12-26; 'Changes in artificial drainage, fertilisers, and climate in Scotland', *Jnl Env Mgmt*, II, 1974, pp 107-21.

* I am much indebted to the Field Drainage Experimental Unit (MAFF), and to the Department of Agriculture and Fisheries for Scotland for the data print-outs on which this article is based.

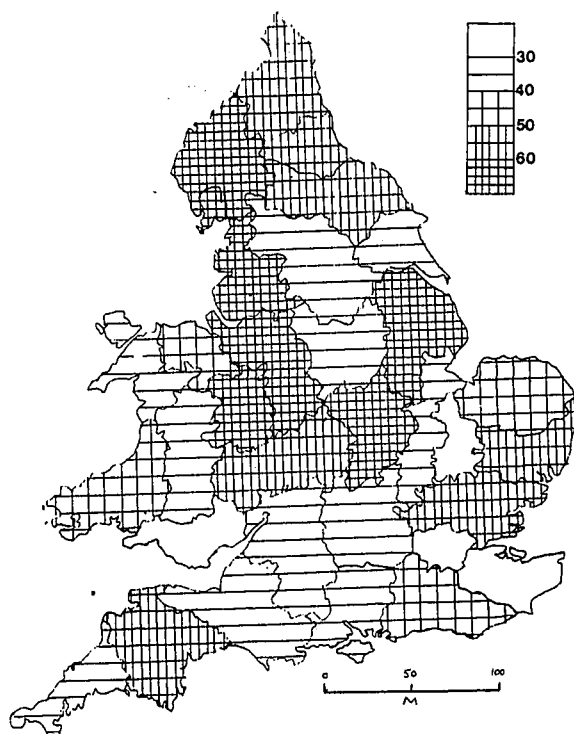


FIGURE 1

England and Wales: MAFF Divisional Areas
Applications for grants for under-drainage, 1972-73:
Percentage of the area submitted for grants in which
pre-1939 drains were reported as partly functioning.

Obviously, since category 1 was omitted, the map underestimates the proportion of areas with old drains, although this is partly offset by the fact that not the *whole* of areas categorized 2 necessarily had old drains. Where the percentage in category 2 is high, the underestimate cannot be as great as it could be in some areas where the category 2 percentage is low. In a special print-out made for Montgomeryshire, a county where the category 2 percentage is low, for each of the six years 1971/72 to 1976/77, it appeared that there was an approximately equal area in categories 1 and 2; this county is probably representative of the areas where the underestimate in Fig 1 is greatest.

A second line of approach was to map the percentage of area in grant applications where 'failure of old drains' was given as a reason for the application. This is shown for 1976/77,

in Fig 2. It shows a very similar regional distribution to Fig 1. Bearing in mind that areas in respect of which grant applications are made in any year do not, in the context of studying drainage history, necessarily constitute a random sample, it is at least encouraging to see the similarity between Figs 1 and 2. Both may tentatively be regarded as very approximately showing the percentage of land at present under crops and grass where there has been early drainage (officially pre-1939, but in fact in England and Wales, nineteenth-century or before, since it is known that very little was done between the 1880s and 1939). It amounts to about

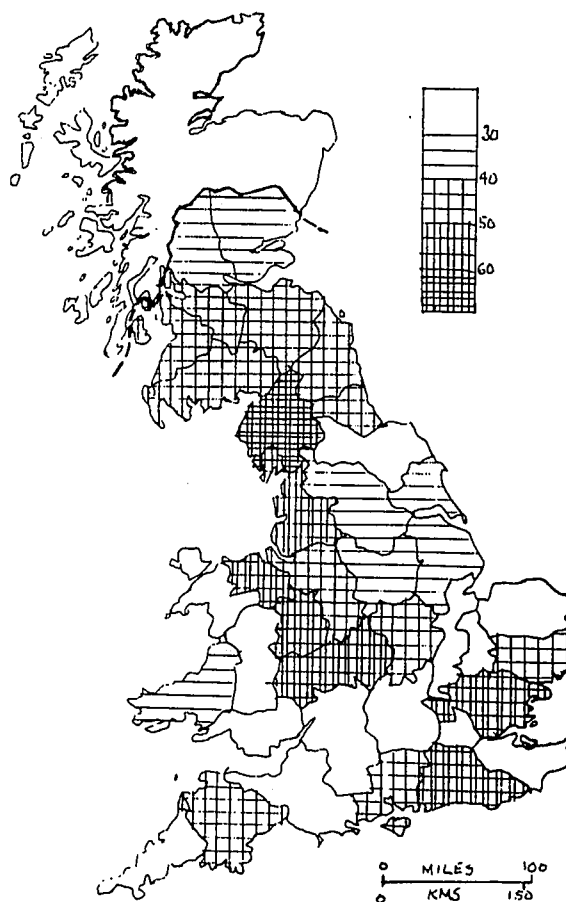


FIGURE 2

Percentage of land area under-drained in the year 1976/77 for which 'failure of old drains' was given as the reason for grant application.

NB Data inadequate north of heavy line.

4,700,000 ha, which accords very well with previous estimates;⁵ and, in a few cases where estate records have been preserved, the similarity in area under-drained is equally striking (eg in the case of the estates of the Dukes of Northumberland, quoted by Phillips, which show very similar percentages to Fig 1).

A map had already been prepared⁶ of the percentages of land under crops and grass under-drained since 1949 (the amount between 1939 and 1949 was relatively very small), and Fig 3 was compiled by adding in the amount of under-drainage in England and Wales from 1940 to 1949; and then combining it with Fig 1. Some land has been under-drained more than once, and this accounts for percentages of over 100, on the map.

In Scotland, similar forms to those used in England and Wales, have been in use for the past three years, but relevant print-outs have been made for 1976/77 only in respect of 'failure of old drains' as a reason for the grant application. Fig 3 is, in respect of Scotland, a combination of Fig 2 with the 1949-76 map. Because of very small samples it was felt to be unwise to extend it to the north and west of Scotland. It is also more uncertain than in England because of the different course of drainage history from that of England and Wales. There is evidence that drainage activity was not by any means negligible there between 1880 and 1949, and so 'failure of old drains' must be presumed to be proportionately less significant as a reason for grant applications than south of the border; and so it is likely that the map somewhat underestimates the amount of pre-1939 drainage as compared with England and Wales.

Whatever its shortcomings, Fig 3 is the first attempt to portray the amount and distribution of all field under-drainage which

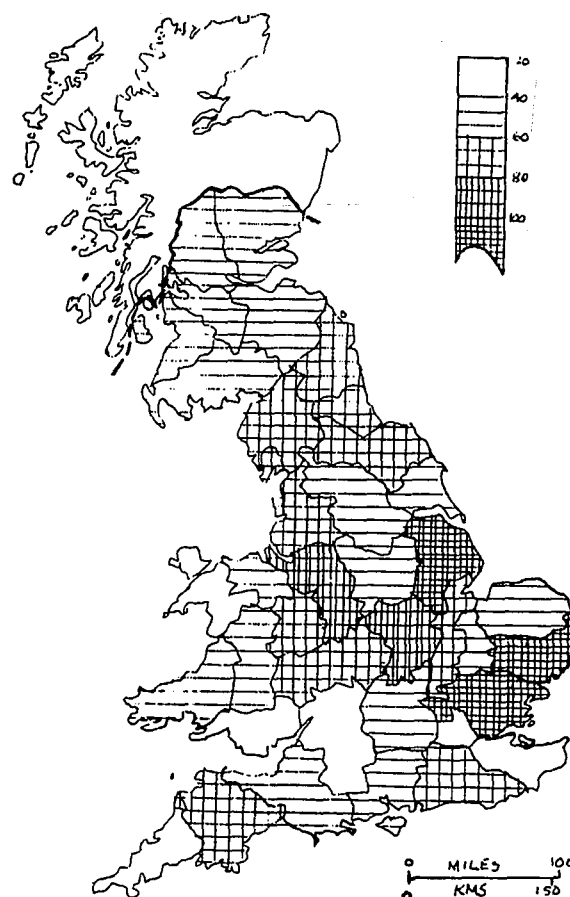


FIGURE 3

The estimated total percentages of land under crops and grass (current area) under-drained up to 1977, by MAFF and DAFS Divisional Areas.

NB (a) Data inadequate north of heavy line.

(b) Some land has been under-drained more than once, hence percentages more than 100 per cent in certain areas.

has been carried out in Great Britain. Similar data are not available for the remaining parts of the British Isles. Further work is being done on the print-out material but meanwhile attention may be directed to a few queries which are presented by the maps in this article.

It has been observed that Figs 1 and 2 are in general gratifyingly similar. But dissimilarities occur in the following areas:

(i) The proportion of grants claimed for 'failure of old drains' is considerably smaller than the proportion with drains partly

⁵ G Cole, 'Land drainage in England and Wales', *Jnl Inst Water Eng and Sci*, XXX, 1976, pp 345-61.

⁶ F H W Green, *Field Drainage in Europe: a quantitative survey*, Institute of Hydrology Report no 57, 1979.

functioning, in: Lincolnshire, Northern Yorkshire, Cheshire/Staffordshire, Leicestershire/Northamptonshire/Rutland, Norfolk.

(ii) The opposite is the case in Surrey/Sussex and Hampshire.

It is quite possible that print-outs of category 1 (above) would resolve these queries. It is also possible that the slight

discontinuity revealed in Map 3 between the two sides of the Scottish Border would likewise be smoothed out.

One thing is at least quite clear, and that is that in England and Wales more under-drainage was undertaken before the present century in the wetter west and north than has been done since 1940.

Notes and Comments

ANNUAL CONFERENCE AND AGM, 1980

The twenty-eighth Conference of the Society was held at Pantycelyn Hall, the University College of Wales, Aberystwyth, on 14–16 April 1980. Papers were presented by Dr Robert Dodgshon, 'Scottish Farming and the Sixteenth-Century Price Revolution'; Dr John Broad, 'The Cattle Plague in the Eighteenth Century'; Dr Eric Kerridge, 'The Agricultural Revolution and the Trade Cycle'; Professor Donald Winters, 'Agricultural Tenancy in the American Middle West: the Historiographical Debate'; and Dr Forrest Capie, 'The Supply of Britain's Meat between the Two World Wars'. Dr Richard Colyer presented an introduction to rural Cardiganshire, and led an excellent excursion into the countryside around Aberystwyth.

The twenty-eighth AGM was held on 15 April 1980. Professor Chaloner, Professor Mingay, Dr Collins, and Dr Chartres were re-elected as the officers of the Society. Dr John Rowe retired as Chairman of the Executive Committee and was succeeded by Professor F M L Thompson. Four vacancies on the Executive Committee were filled by the re-election of Dr Bettey, Dr Hey, and Professor Thompson, and by the election of Dr P Roebuck.

In presenting the report of the Executive Committee, the Chairman, Dr Rowe, announced that membership was stable at 825, a satisfactory position at a time when many societies were experiencing losses, and with the savings made in the production of the *Review* the Society was financially sound. The Winter Conference had again been successful in 1979, and another was being arranged for 6 December 1980, again organized by Drs Baker and Phillips. The 1981 Spring Conference was to be held in Lincolnshire, and in 1982 the Society proposed to make its first visit to Scotland. There was good news of publications, with Abel's *Agricultural Fluctuations* in the press and proof copies on display at the conference, and with Dr Raine Morgan's bibliography of theses on agrarian history in preparation. The Society proposed to keep up the pressure on the government over the proposed sale of

Laxton, seeking the help of other interested parties. In retiring from the Chair, he offered his best wishes to his successor, Professor Thompson.

The Treasurer reported on another satisfactory year in which income exceeded expenditure by over £1000, and interest on reserves of over £8000 had become a major source of income. He hoped that further improvements in the forthcoming year would enable the Society to weather future financial storms.

The Editor reported that during the year the number of articles submitted had fallen slightly, to eighteen, but that as a result there was now a shorter backlog of articles waiting for publication. Book reviews were now appearing promptly, and new articles submitted could appear in a year.

Thanks were extended to Dr Richard Colyer for his excellent work as local Conference Secretary.

WINTER CONFERENCE, 1980

The Winter Conference will be held on Saturday 6 December 1980 at the Polytechnic of Central London, New Cavendish Street, with the theme 'The Dissemination of Agricultural Knowledge'. Papers will be given by Dr Joan Thirsk, Dr Pamela Horn, Mr Nicholas Goddard, and Dr John Walton. A booking form and programme is inserted in the *Review*, and any enquiries should be addressed to Dr Dennis Baker, Christ Church College, Canterbury, Kent.

HISTORICAL ECOLOGY GROUP

A group is being formed to study the applications of quantitative ecological field techniques to the past. It seems probable that such methods may throw considerable light on the history of agriculture and be particularly valuable where documentary evidence is lacking. Members interested in forming such a group should contact Mr Adrian Cowell, 7 Holt Coppice, Aughton Green, Near Ormskirk, Lancashire.

(continued on page 128)

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Compiled by SARAH CARTER

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NOTES AND COMMENTS

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AGRICULTURAL MANPOWER SOCIETY

The Agricultural Manpower Society — formerly the British Society for Agricultural Labour Science — is preparing to publish a new journal, *Agricultural Manpower*. This journal will focus on the human element in rural society, and cover the work, training, education, health, safety and advancement of agricultural manpower. Enquiries and contributions should be sent to Mr G P Allen, Research Department, Agricultural Training Board, Bourne House, 32-34 Beckenham Road, Beckenham, Kent BR3 4PB.

SPRING CONFERENCE, 1981

The Spring Conference will be held 6-8 April 1981 at Horncastle Residential College, Lincolnshire. The programme will appear in the next issue of the *Review*, but any enquiries or offers to present papers should be addressed to the Secretary.

THOMAS MUNCK'S STUDY OF THE DANISH PEASANTRY

Thomas Munck has recently published a monograph entitled *The Peasantry and the Early Absolute Monarchy in Denmark, 1660-1708*. The book is a detailed study

of landlord-peasant relationships in seventeenth-century Denmark and can be obtained from the Treasurer of the Society. A notice giving price and further details is inserted into the *Review*.

HISTORIC LANDSCAPES STEERING GROUP

This group is preparing a Handbook to Historic Landscapes as a reference guide for volunteer recorders which it hopes to publish late in 1981. Members interested in the work of the group should contact its secretary, Dr R N Millman, Department of Geography, Polytechnic of North London, The Marlborough Building, 383 Holloway Road, London N7.

INTERNATIONAL BEE RESEARCH ASSOCIATION

British Bee Books: A Bibliography 1500-1976 records 830 printed books and twelve early manuscripts and with its introduction, comments and illustrations provides an annotated history of beekeeping, century by century. The book is obtainable from the International Bee Research Association, Hill House, Gerrards Cross, Bucks SL9 0NR, price £13 post free.

Book Reviews

MARGARET GELLING, *The Early Charters of the Thames Valley: Studies in Early English History, VII*. Leicester UP. 1979. 208 pp. £14.

This volume closes the series begun in 1960 with my *Land Tenure in Early England*: the title, like that of the series, being the invention of the late Herbert Finberg. The first volume cost 30s, this one is almost ten times that amount. There is however little use in reproaching the publishers. A new series under the editorship of Dr N P Brooks will replace the existing one: its title, *Studies in the Early History of Britain*, would have warmed the cockles of the Finberg heart.

This closing volume deals with all known pre-Conquest charters relating to landownership in Bedfordshire, Berkshire, Buckinghamshire, Hertfordshire, Middlesex, Oxfordshire, and Surrey. Only Kent and Sussex remain to be tackled and perhaps the publication of full texts of these charters in the British Academy edition will make a S-E England volume unnecessary. Dr Gelling prints texts of two hitherto unpublished charters, though without a witness-list in one case. I should imagine the MS copy on which she is dependent is defective here, but she does not say. She lists a third unpublished charter — for Westminster Abbey — but does not print it since it is generally accepted as a rank forgery. I think this is a pity. Forgeries, like authentic charters, are evidence of something and need to be studied, not laid aside.

All these charter volumes, despite a uniform presentation, have their nuances. Dr Gelling has kept her curiosity in tighter rein than Finberg would have done, and there are no historical appendices, but, as we should expect, there is a fuller emphasis on place-names. The solitary appendix, contributed by Michael Reed, discusses and prints the six boundary perambulations surviving from Buckinghamshire and appends a map in each case. This is of the greatest value, especially to the local and agrarian historian, yet very few charter boundaries have been given the informed scrutiny Mr Reed devotes to Buckinghamshire. In volume VI of the series Dr Hart paid great attention to the 'personnel' of the charters and laid the foundations of a prosographical study of the charters of a substantial portion of eastern England. Dr Gelling has ignored this side of things, and this is a pity since the witnesses of the charters she treats must contain many clues to the rise of Wessex and the decline of Mercia. So far as I have tested it the calendaring is meticulously done and the stars are assigned a little more rigorously than has always been the case in this series. A small point, but illustrative of the tantalizing problems Anglo-Saxon charters are always presenting, is raised by No 31. This is a charter of Edward the Elder, replacing a charter of his grandfather that had been

rendered illegible by water. Dr Gelling points out that the boundaries are very detailed and could hardly have been copied from a water-soaked charter, so she supposes that they represent the topography of 903 rather than that of fifty years earlier. But need we conclude that the charter was totally ruined? If the body of it was illegible a replacement would have been advisable even if the boundary clause was intact. But cavils apart, this will sit on the shelves, alongside the volumes of Finberg and Hart, in every serious Anglo-Saxon library.

ERIC JOHN

JOHN PATTEN, *English Towns, 1500–1700*. Dawson, Folkestone, Kent. 1978. 348 pp. £12.

Dr Patten has written an extremely agreeable and balanced account of the economic functions and development of towns between 1500 and 1700. Having made use of much recent research in theses and dug deep into older books and articles appearing up to 1977, he offers a thoroughly serviceable up-to-date survey of his subject. His comparative approach gives a fair picture of towns with varying strengths of attachment to the rural areas around them. None, he emphasizes, were completely parasitic on the countryside at this period. And while pig-keeping in towns is used by Dr Patten to illustrate this argument, it should be added that the scale of pig-keeping was transformed when brewing was moved from village outhouses to townsmen's backyards and larger installations. Breweries and distilleries then became big urban business, and their waste grains handsomely fattened such large numbers of pigs that country pig-keepers were severely handicapped by the competition. Gastronomes continued to praise country-fed pork above the rest, but cheap meat from brewers' grains greatly improved the diet of the poor in towns.

In general, the consequences of economic and social change are not pursued in this way in order to uncover deeper layers of differentiation in town societies. But readers will find very useful tabulations of the total population of many different towns, and a good discussion of the mobility of people, leading to the conclusion that long-distance migration gradually diminished as more remote areas were drawn into commercial contact with the capital. Dr Patten concludes this section of his book with a strong plea for more studies of regions which will integrate the towns and surrounding rural areas, rather than analyse them separately. This is plainly a deficiency in our understanding which must concern the geographers; perhaps, however, historians will feel more acutely the

absence of more personal studies of urban families in different categories of occupations.

As a step towards filling this gap Dr Patten introduces his original researches into East Anglian towns, demonstrating the varying range of occupations represented in different-sized centres. It is true that his eye falls on occupational groups in general, rather than on individual families with a tradition in one craft. But it is a step forward to have the occupations separately identified and associated with distinctive ranks of towns. It is especially illuminating to see how specialized services, that were available only in the largest towns before 1550, gradually infiltrated the smaller ones. The largest number of different occupations — 223 — were represented only in Norwich in the sixteenth century, and to the end of the period some luxury trades remained confined to Norwich and the other county capitals of Bury St Edmunds and Ipswich. But some occupations, such as those of apothecaries, and inn- and alehouse-keepers, turned up in the next century in increasing numbers of smaller places. By 1700 the consumer society embraced many more provincial centres than in 1550. The method of analysis deserves to be imitated in comparisons of many other towns.

Dr Patten's demonstration of the improved facilities in small towns for buying such consumer goods as soap, haberdashery and paper, makes one regret all the more the poverty of the index. Soap-boiling, needle-making, button-making, and pipe-making serve as important clues in his search for evidence of more diversified occupations in towns. But having received attention in the text, they are omitted from the index. In addition to the scanty index, the scalograms are printed upside down, and the proofreading is slipshod. This is a valuable survey of early modern towns, written in a lively, stimulating prose, but it is less than well served by its printer and publisher.

JOAN THIRSK

ROBERT TITTLER (ed), *Accounts of the Roberts Family of Boarzell, Sussex, c. 1568–1582*. Sussex Record Society, Barbican House, Lewes. 1979. xxviii + 181 pp. £6.75 plus postage.

This book contains the first two volumes of the farm and household accounts of the Roberts family of Boarzell in the parish of Ticehurst in north-east Sussex. The Boarzell estate, which came into the hands of the Roberts family in 1459, consisted of the capital house and various cottages, a mill and some 300 acres of land, together with various other properties in the surrounding area, and this record of receipts and expenditure was kept by Dame Margaret Roberts who managed the estate from the death of her husband Thomas in 1567 until her own death in 1587. Agricultural and social historians will find much of interest here, for the

accounts contain details of the sale of livestock, timber, hides, and corn, of the income from rents, and of the regular purchase for consumption by the household of poultry, fish, oysters, spices, fruit, beer, and wines to supplement the very large quantities of home-killed meat which were consumed. The fact that Boarzell lay on the road from Hastings to London may partly explain the large quantities of different spices and imported fruits which found their way to the family table as well as the fifteen different varieties of sea fish which formed a regular part of their diet.

For some purposes, however, the usefulness of these accounts is limited by the unsystematic way in which they were originally kept. The majority of entries are not dated by year, and some lack even day or month, so that they cannot be made to yield precise information about changes in prices and wages or about the pattern of sales and purchases of goods and farm produce. Neither can they be used to assess the precise state of the family finances. It would have been helpful to have had a more detailed introduction about the family, the estates, household, and the farming economy, and more information from other documentary sources such as the probate inventories of 1567, 1577 and 1587 which are mentioned in the Introduction but of which few details are given. With the evidence provided here of an apparently high standard of living in the house and what seems to be a reasonable income from rents, it is not easy to understand the editor's emphasis on the declining fortunes of the family, and one would like to know more of the background. A more detailed glossary would also have been useful since the accounts contain numerous words which require explanation, while some of the words which are included in the glossary, such as 'marl', 'peascod', 'trug', and 'wain' will already be familiar to most of the people who are likely to use this volume. The accounts would have been easier to read if the editor had used capitals for the initial letters of all the personal names instead of adhering to the variable practice of the sixteenth-century scribe.

But these criticisms apart, this volume is full of detail concerning daily life in an affluent household, and contains much of interest concerning agricultural practices, especially details of animal husbandry, the extensive use of marl, sales of sheep and cattle, and the running of the family estate.

J H BETTEY

GERTRUD SCHRÖDER-LEMBKE, *Studien zur Agrargeschichte*. Quellen und Forschungen zur Agrargeschichte, Band 31, Gustav Fischer Verlag, Stuttgart. 1978. 199 pp. DM48.

This is an attractive collection of essays by Gertrud Schröder-Lembke, gathered together as a tribute to her

in her seventieth year. English readers will probably know the author best as the editor of two sixteenth-century German agricultural treatises by Martin Grosser and Abraham von Thumbshirn (reviewed in *AHR* XVII, ii, 1969), and as the writer of an article on English influences on German agriculture (*Zeitschrift für Agrargeschichte* 12, 1964). Here the latter article is reprinted, along with six essays on problems of field systems, five on agricultural writers from the fourteenth to the end of the eighteenth centuries, finishing with two substantial accounts of the introduction into Germany of clover and rapeseed.

Dr Schröder-Lembke has a practical agricultural knowledge that has sharpened her eye for the implications that follow directly, or indirectly, from statements in her sources. And for her every document and every writer, belongs in a unique geographical and social environment that must be carefully considered. Important new information emerges from these carefully planned investigations, therefore. Indeed, every essay becomes an exciting exploration into new territory.

The first essays in the volume, which enquire into the origins of different German field systems, start with careful reading of the available documents in print, and then proceed to a sternly practical and precise interpretation of their meaning. On this subject we know that many more documents await study than are used here, but these articles contain many fruitful insights. The main theme of the second part of the book is the role of agricultural writers in promoting innovations. The first essay discusses Petrus de Crescentis, whose book on agriculture (in Latin) was finished in 1305 in Bologna, but was first published in 1471 in Augsburg, seven years before it was published in Italy. Its translation into German in 1493, and many reprints thereafter, undoubtedly met a need; Dr Schröder-Lembke argues that the most influential part was that on gardens, for it introduced the idea of pleasure gardens in the Italian Renaissance style, as opposed to useful gardens, and transformed German attitudes. It should also be said, perhaps, that in stimulating the interest of the upper classes in gardens, it awakened a pride and competitive spirit in finding plant varieties that improved on the old; and among men who had the means and contacts to pursue this interest effectively, it produced remarkable results. The third essay discusses the originality of the first German book of husbandry by Johannes Colerus, published in 1592, which passed through twenty editions in the seventeenth and eighteenth centuries. Colerus acknowledged that the work of his father Jacob lay at the heart of his book. So Dr Schröder-Lembke explores the father's life, showing plainly that this was based on peasant experience in Silesia, where Jacob was a pastor. It is likely, moreover, that Jacob Coler and Martin Grosser, the author of another agricultural treatise published in

1590, were friends and collaborators in collecting information from their peasant neighbours. Coler and Grosser had studied in the same university, were of the same age, and in the 1570s lived ten miles from each other. When the son, Johannes, published his first books of husbandry in 1592, 1593 and 1596, therefore, they reflected Silesian experience; in enlarged editions after 1600 they reflected Mecklenburg experience where Johannes settled as a pastor.

The essay concerning English influences on German agriculture is reprinted here, but, having been published in 1964, it has been overtaken by more recent publications, notably those of Hans-Heinrich Müller and Gerhard Ahrens. An account follows of the life of Johann Christian Schubart, the so-called 'apostle of clover' in Germany, who acquired a country estate which he was determined to turn into a profitable enterprise. His energetic campaign and forceful writings on clover attracted wide notice, and undoubtedly helped to spread the use of clover in a three-course rotation in the later eighteenth century. It is of particular interest that he had seen clover crops in England and the use of lime as a fertilizer. Dr Schröder-Lembke's longer thesis on clover, however, presents Schubart's work in a somewhat different light, and this is perhaps the most important essay in the book.

Although Schubart has conventionally been associated with the first introduction of clover into Germany in the second half of the eighteenth century, Dr Schröder-Lembke's thesis shows conclusively that this was not its first appearance in Germany. Numerous earlier references in Germany and neighbouring countries disclose its long history as a cultivated plant in Europe. The evidence fully supports the argument of Slicher van Bath in volume V of the *Cambridge Economic History of Europe*, that what was new in the later eighteenth century was not the components of the Norfolk rotation, nor, indeed, the system, but the economic circumstances that made it suitable and profitable.

The development of clover cultivation in Europe, as it is traced out here, deserves detailed description. Red clover, also known as Spanish clover, is first described in the sixteenth century by Dutch (1566) and Italian (1550, 1566) writers. Its origin as a cultivated plant is disputed. It may have been called Spanish clover because the Netherlands — one of its first centres — was under Spanish rule. According to another theory, however, it was a variety from the mountains of southern Europe (Spain, Italy, Greece, and Turkey). An important clue is given by Max Fugger in 1578, writing on the management and feeding of war horses, that he had seen the tallest, biggest and sweetest trefoil, on which horses thrived, in Valencia, Spain, in Naples and in the Netherlands. This was assumed by a writer in 1687 to be a reference to lucerne, but Dr Schröder-Lembke believes it to describe clover. At all

events, it is significant that the earliest references to clover turn up unequivocally in two of the most densely populated areas of Europe, northern Italy and the Netherlands, where the demand for fodder crops was likely to be most pressing. It was not at this time treated as a crop in an arable rotation, but as an improver of grassland.

The Italian influence can be traced in Austria by 1687 when Hohberg described clover as a fallow crop, and also as grown for seed in closes around Enns, near Steiermark. Steiermark remained a noted centre: its clover was highly valued in the eighteenth and nineteenth centuries, much seed being exported to Germany. One writer also speaks of two varieties in Steiermark, one flowering earlier than the other. All this leads Dr Schröder-Lembke to guess that Steiermark clover was originally an Italian variety, adapted by selection to the mountain climate. Clover was steadily spreading from this centre of origin in the period 1680 to 1730, for in 1715 Lubens von Wulffen mentioned it in Austria, Bohemia and Silesia, in various places in Saxony and Thuringia, and in Mähren where the cattle were stall-fed. In Austria, moreover, tithe was already being paid on clover in the period 1710–30.

As another centre of influence, the Netherlands aided the spread of clover in north Germany. It is believed to have been taken to the Rhein Pfalz by Walloons in 1561 and 1579, and Coler in the 1645 edition of his book of husbandry mentions it sown under grain. Whether this reflected Mecklenburg experience is not clear, but an important pamphlet was published in 1715 in Rostock by Lubens von Wulffen, recommending so-called Spanish clover to the peasantry. Wulffen had failed in an official attempt to introduce peasant reforms in Prussia, and had entered the service of Duke Karl Leopold of Mecklenburg in 1716. He had travelled in Holland and Austria, and seen clover crops and the stall feeding of cattle; his official task in Mecklenburg was to raise the standard of peasant agriculture. His pamphlet was distributed to parsons and officials who were to instruct the peasantry every spring and autumn in clover cultivation. Seed was bought from Hanover. Wulffen left this post in 1719 and died in 1721, seemingly leaving little to show for his labours. Yet clover persisted, for in 1763 another author wrote of the well-known Spanish clover that had been used for many years in Mecklenburg.

All this evidence makes it clear that clover was well known in parts of Germany long before the middle eighteenth century. This poses the question how it was cultivated, and here Dr Schröder-Lembke offers many original insights. Wulffen had offered two alternative methods to his Mecklenburg readers: on large farms he suggested clover in a rotation, and the stall-feeding of cattle. For peasants he recommended the Dutch system of growing clover in closes (*Kämpen*), which was a system also used in Westphalia, Halberstadt and

Magdeburg. Such a system, Dr Schröder-Lembke suggests, explains why clover seed was sold in small quantities — in half-pound packets — in Berlin in the 1730s. Clover sickness must quickly have become troublesome, however, involving continual changes in the use of individual closes, and that is why a new initiative was needed in the mid-eighteenth century.

This initiative came in the form of various experiments with clover in a rotation — with red clover in a six-course rotation on the island of Fehmarn, which started c1730, and was based on Dutch examples; with white clover in Mecklenburg; and with white and red clover under various different systems in Schleswig-Holstein. Here the pioneer was a pastor, Philipp Ernst Luders, who read all the agricultural literature avidly, procured seed from Holland, and gave it freely to his parishioners. He recommended various trials: sowing in autumn on small plots to mow in May for stall-feeding, sowing red clover in autumn under rye to use the following summer; or sowing under oats in spring for reaping in the following year. A mixture of red and white clover, flowering in succession, gave a longer feeding season for milking cows. Eventually, c1780, Mecklenburg and Holstein came to favour a system of alternate husbandry, whereby red, or red and white clover, were sown together to give a hay crop in the first year, and grazing for stock in the second and third years. Schubart, in contrast, thought this system insufficiently intensive, and urged red clover (because it produces a heavier crop) with stall-feeding. The fact that red clover does not endure more than three years was not a disadvantage, for it was being used for one year only in a four-course rotation. In short, when it is said that German farmers were slow to use clover, what is meant is that they were slow to use red clover in a four-course rotation. They were not slow to use white clover in hay meadows. Even before the four-course rotation established its hegemony, various other rotations were being tried in the first half of the eighteenth century in south Germany that would give clover a place. One was a three-course, in which the clover was undersown with the wheat crop and used for two years, thereby foregoing a spring grain crop. But better results were achieved when clover was undersown with the spring grain and stood for the fallow year, proving an excellent preparation for winter grain. This was being used in the Coburg region in 1724, in Saxony by 1737, and near Prague at much the same period. Schubart emerges from all this as one energetic apostle of clover among many; what was outstanding was the vigour of his convictions in urging not only clover cultivation, but the abolition of common rights, so that a fodder crop could be taken on the fallows. For English historians many questions arise concerning the system or systems of clover cultivation used in our earliest examples. Sir Richard Weston advocated an arable rotation that he saw in Holland,

but were other systems the subject of experiment too?

The final essay in this volume traces the spread of rapeseed and coleseed in Germany. Rape is first mentioned as a cultivated crop in 1366, and as a tithed crop in 1422. Heresbach was thoroughly familiar with it on the Lower Rhine (and was almost certainly growing it himself) c1570, where it was incorporated in a five-course rotation. It was known as an autumn-sown crop (August — September) and as a spring-sown crop. Its closely related, but older form, coleseed, was grown in eastern Germany in the sixteenth century and southern Germany by the early eighteenth century (c1720).

Dr Schröder-Lembke effectively explains the problems that obstructed the wider cultivation of coleseed. It was difficult to fit into a three-course rotation because it had to be sown in August or September. It fitted best into a system of alternate husbandry, where, after a few years of grass, the land was in ideal condition for rape without extra manure, and winter barley could follow. It was a labour-intensive crop, in harvest time especially, and so was of no use in areas like Prussia where labour resources were scarce. It was labour-intensive in autumn too if winter rape was used in a three-course rotation, as in the Pfalz in the nineteenth century, for the seed had to be planted first in gardens, and then transplanted into fields in September or October.

Demand for rape oil built up only slowly, as living standards rose, and people demanded lighting in their houses. Train oil served until it became scarce. Then coleseed came into its own. But just as it held an important place in English agriculture in the seventeenth century, when corn prices were low and commercial crops were extremely profitable, so it rose and then fell in esteem in Germany in the eighteenth and nineteenth centuries. Dr Schröder-Lembke continues the story of this crop into the era of plant breeding in the twentieth century, which has now made rape a major source of vegetable oil while much reducing its demand on labour.

Finally, mention should be made of an essay on von Thünen and his land-owning neighbours, for von Thünen's work has attracted much notice from geographers in recent years, and Dr Schröder-Lembke worked for many years in the Thünen archives in Rostock. Her essay in this volume is based on that archive, and shows how much von Thünen depended in his theoretical writing on the practical experience and readiness to experiment of neighbouring landowners. A forester gave him figures on timber production, a landowner furnished him with information on commercial plants, and another debated mathematical problems with him.

This volume is rich in ideas for English historians interested in the same period of agricultural development. In innumerable instances it illustrates

how closely European landowners kept in touch with one another. It refines the procedure for investigating agriculture innovations, and suggests many new questions to be asked of the sources. Not all the conclusions offered here are final, or are intended to be final. But they are likely to stimulate more research. The introduction by Günther Franz tells us that Dr Schröder-Lembke is well on the way to completing a history of horticulture in the early modern period. This is another branch of agricultural activity in which European countries were closely linked. Its appearance will be eagerly awaited in England, where so much work is being done at present on the early history of gardening.

JOAN THIRSK

J R LOWERSON (ed), *Southern History*, Vol I. Dawson, Folkestone. 1979. 271 pp. £10.

This well-produced volume represents an exciting new venture to establish an annual journal of essays concerning the history of Southern England, from Cornwall to Kent. While the contents tend to concentrate on economic and social matters, the approach as a whole is catholic, and the arrangement chronological. The nine articles in this first volume cover aspects of local studies from the thirteenth to the twentieth century varying from the medieval use in land law in Berkshire to the history of markets, 1500–1700, and to an analysis of archive services available in the region. To these is added a comprehensive series of book reviews, a review of periodical literature, and a select list of local history pamphlets.

Inevitably, a volume of this kind is uneven in quality and approach; its significance that it brings together a number of local studies which, by their very nature, call for comparable research elsewhere in the region. For the student of agrarian history Dr Farrant's examination of 'The management of four estates in the lower Ouse valley, Sussex, and agricultural change, 1840–1920' is a valuable detailed study, revealing the effects of varying estate management patterns set against Lord Ernle's traditional analysis; and there are few of the nine articles which fail to impinge on matters agricultural. In particular Dr Jefferies' essay on medieval Berkshire, Professor Youings' paper on 'The south western rebellion of 1549', and Dr Rule's study of 'Social crime in the rural south in the eighteenth and nineteenth centuries' are noteworthy.

A strong editorial board, chaired by Dr B Coleman and including representatives of universities, polytechnics and record offices across southern Britain, ensures the quality, and Dawsons are to be congratulated in accepting the challenge of publishing at this time. As the editor remarks in his preface, there is a need to rectify the present pattern of regional and local studies. *Southern History* promises much and should be warmly welcomed by historians and sociologists generally.

FELIX HULL

IAN WHYTE, *Agriculture and Society in Seventeenth Century Scotland*. John Donald, Edinburgh. 1979. ix + 301 pp. £14.

For too long the study of Scottish agriculture before 1750 has been based on the writings of the improvers or modernizers of the later eighteenth century, men with a mission, a pre-judged case to promote, and a complete contempt for the traditional modes that they were so eager to abolish. The result has been the firm rooting of the conception of Scottish agriculture before their own day as monolithic, unvarying as between places and through time, and utterly inefficient. Of recent years, it is true, work on specific themes has somewhat chipped the monolith. The accretion of evidence has made it impossible to believe that Scottish agriculture was completely stagnant and unchanging before 1700 or that a single 'system' of runrig cultivation or of infield and outfield prevailed everywhere in the country. Yet there has been no systematic account of agriculture as a whole to embody these recent but partial findings. Now comes a work by Ian Whyte that does this and very much more; it embodies recent and piecemeal contributions but, much more impressively, it bases its comprehensive account of seventeenth-century conditions on detailed work with the original sources. The book abundantly proves its own claim that the sketchy and simplified notions that have prevailed have been due to lack of activity among historians rather than lack of possible sources. The sources listed in the bibliography, mainly in the shape of estate records, are quite staggering in their number and geographical coverage and it is perfectly evident in the text that they have been used in detail. Indeed the argument is notable for the ingenuity with which stray details, in particular those found in estate records, have been turned into decisive argument. Dr Whyte is altogether too modest when he says that it awaits further research to 'put the subject on a less tentative footing'. Such is his handling of detailed evidence that many of his arguments have the look of definitive conclusion rather than tentative beginning.

What then are the characteristics of the agriculture now so clearly revealed? He suggests that even early in the seventeenth century crops were more varied than has usually been stated and that the runrig farm, in the sense of a concentrated unit within which the lands of several tenants were inter-mingled in strips, was possibly never universal or even predominant. With greater certainty he can assert that there were two phases of considerable change in the seventeenth century. Arable acreage was expanded and output per acre was raised in these periods of expansion. In part the expansion was achieved by changes of method and structure. In particular, in an interesting development of the original suggestions made by Fenton and Smout, he shows how critical was the use of lime both in the reclamation of land and in the better use of existing

fields. Properties and tenancies were increasingly consolidated in compact blocks and enclosures are seen to be proliferating in certain areas. Leases were quite widely granted to the lesser tenants and holdings were thrown together to make larger units. In general many of the developments that have been held to start in the eighteenth century are shown as prefigured in the seventeenth. Consequently food production rose markedly after 1660, a change that has been overshadowed in the historical memory by the disasters of the 1690s. He shows that wheat, a purely commercial crop, was grown widely along the coastal areas, even, surprisingly, in the unfavourable climate of Aberdeenshire; pease, an uncertain and at best low-yield crop, was grown for diversification; here and there, but admittedly not with any frequency, a bare fallow is found within the infield. Expansion, it is shown, was accompanied by commercialization with active and wide-ranging trades in grain and cattle.

In spite of evident growth and diversification, and of the spread of enclosure and the consolidation of farms, Dr Whyte is rightly cautious about claiming that anything in the nature of a revolution overtook Scottish agriculture in this period; at the most it was a case of preparing for rapid change later on. Indeed, his detailed evidence shows the limits as well as the facts of change. One item in the traditional view he strongly supports — namely that it was landlords who undertook and stimulated agricultural changes whenever they may have started; some of the main innovations are shown to be confined to the home farms.

Inevitably on some points the reader may wish that the argument had been taken further. Dr Whyte suggests that Scottish agriculture of the time was certainly less effective than that of England or the Low Countries but would stand well in comparison with other European countries; but it is an off-the-cuff remark with little evidence adduced. How fascinating to have the suggestion more fully examined! Again he stresses the importance of improving legislation in the seventeenth century, and in particular the acts of 1695 'anent runrig' and for the division of commonities. Yet the point is not fully proven; while, unlike so many writers in the past, he emphasizes the difference between runrig in tenanted lands and proprietorial runrig — which alone was affected by legislation — he does not assess how widespread was the latter type; the scope of the acts as far as they dealt with runrig can scarcely be assessed without such an estimate. Finally, it is a disappointment — the one clear disappointment of the book — that he says so little of the labourers, servants and cottars (although it must be admitted that this could be owing to the reticence of estate documents on the condition of such people); indeed one aspect of his study suggested by his title — the relation of agriculture to society — is notably less well investigated than the state of agriculture itself.

But these are very minor complaints in face of the massive achievement. Truly it has laid a foundation from which any future study of seventeenth-century, and indeed eighteenth-century, society must start. A big step has been taken in our understanding of the Scottish past.

MALCOLM GRAY

T W BEASTALL, *The Agricultural Revolution in Lincolnshire*. History of Lincolnshire Committee, Lincoln. 1978. xii + 256 pp. Illus. £7.50.

This book, the first volume covering the modern era in the History of Lincolnshire series, is welcome as both summary and synthesis of the extensive published material relating to Lincolnshire agriculture in the two centuries after 1700. T W Beastall is well qualified by his own research experience in Lord Scarbrough's estate records and by the skills, here exemplified, of selection and exposition. In compiling his book, he has been faced with a large measure of both contemporary and recent work, diverse in quality and often restricted in range. For although the bibliography of Lincolnshire agricultural history numbers books as important as Joan Thirsk's *English Peasant Farming* and David Grigg's *Agricultural Revolution in South Lincolnshire*, and a handful of articles of the first water, it remains true that many questions which the perceptive historian may, and should, ask of his sources cannot yet be answered. We need a great deal more documentary investigation even for Lincolnshire before a comprehensive survey can be mounted of the course of development followed by its agricultural history. Questions related to productivity trends, entrepreneurial recruitment, capital formation, and even to more widely considered issues such as the diffusion of technological innovation and the normative or promotional role of the county's estate-owners, still cannot be treated in a convincing or integral manner. It is, therefore, not yet the occasion for a complete synthesis of the agricultural history of any county, even though Lincolnshire offers more scope to *haute vulgarisation* than any other in England. Within his frame of reference Mr Beastall has accomplished much. His contribution by way of original research has not been large, but his careful and sensible discussion of both accessible and obscure secondary sources will make *The Agricultural Revolution in Lincolnshire* of some use to the specialist and interesting to the county patriot who needs more than the brief chapters on agrarian developments offered by Sir Francis Hill in his *History of Lincoln* or by Maurice Barley in his undeservedly neglected *Lincolnshire and the Fens* of 1952.

The approach of the author has been traditional in nearly every respect. The opening chapter, 'The

Agricultural Revolution', avoids theoretical concepts and eschews discussion of the rather tiresome but fundamental controversy that has accreted round the term in the past twenty years. For Mr Beastall the notion is taken as read. What he sets out in the first chapter is a combination of background social geography and a sketch of the agricultural economy of the old regime. His is not a static presentation and he does bring into the reckoning the evidence of rural change from Joan Thirsk and others, but no attempt is made to relate early examples of innovations to a model of accelerated growth before the late eighteenth century. Kerridge, John and Jones might never have lived! Nevertheless, this omission is not merely the result of an oversight on the author's part. Lincolnshire really does seem to have been very late in crossing the watershed of development that we still call the 'Agricultural Revolution'. Beastall is not precise as to dates but he seems to focus upon the period after 1780 as the crucial epoch, and he quotes the view widely held in the nineteenth century that 'improvement' in the county dated in essentials from the Napoleonic War. What his traditional approach denies him is the opportunity to discuss the seeming dilatoriness of the county in adopting techniques and practices already well in evidence in Norfolk and Northumberland.

The next section of the book after his introductory chapter concerns the public or institutional face of improvement, enclosure and drainage. It may be that the pendulum is swinging back towards the study of enclosure as an engine of rural development, but Mr Beastall's careful discussion of the process in Lincolnshire does not convince me that the parliamentary enclosure movement actually released new energy of a beneficial kind. Indeed he devotes much time to the costs, and by implication to the drawbacks, of enclosure suggesting thereby that the consequences were ambiguous to say the least. Severalty was necessary for nineteenth-century agricultural improvement, but the transition from open to enclosed was not signalled by the passing of an Act nor by the enrolment of an Award of Enclosure since the time elapsed between the first assaults made on the common-fields and the achievement of a land-use geography appropriate to Victorian High Farming usually required several generations of landholders to encompass. On drainage the contribution of the generation which reached maturity in about 1760 is less in doubt, and the vast tracts of fen and marsh and water-logged clays reclaimed for husbandry in the following century are very important to our understanding of Lincolnshire rural history. More than most, the county could be described in the mid-nineteenth century as virtually a new country as its waste was colonized by farmers and labourers, and in some districts populated by the establishment of new village communities. Mr Beastall's treatment of enclosure and drainage is factual

and accurate. He balances his discussion between the various regions of the county, but the chapters lack exegesis — we know the means but not really the ends of things.

The same criticism can be levelled at the rest of the book. The chapter on the county's social and commercial fabric on the eve of the agricultural revolution sets out to do too much and succeeds in being superficial on almost all the topics within it, except on the role of land stewards in the local economy. Indeed the chapter is a good example of the straitjacket into which the writer has been forced by focusing upon the available published work *relating to his county*. He could have gained much in insight had he read more extensively in the generalist literature of the period and in specialist works devoted to other counties. Every chapter falls short of the ideal in this respect, but to cavil repeatedly at deficiencies when they can be attributed to difference of opinion between author and reviewer is impertinent. The chapters on 'Lincolnshire Labourers' and 'Two Upland Farmers' are good of their kind. Neither establishes the context in which the lives of labourers and well-to-do farmers were led but as vignettes of the tribulations and modest successes of obscure lives they are interesting. In the first, however, Mr Beastall does not attempt to explain, nor even to investigate, why Lincolnshire should have been numbered among the counties of relatively high agricultural wages in the nineteenth century whereas Norfolk and its other neighbours in the south were below the salt; and in the second of these chapters, the relevance of his choice of case studies is not spelled out.

So we could go on. But to sum up, *The Agricultural Revolution in Lincolnshire* is a sound, traditional and rather unadventurous book. It is, however, reasonably comprehensive in the choice of themes for discussion — even though the themes are not always drawn out to their proper length — and the balance between north and south, between upland and lowland, between one distinctive period and another is sensibly maintained throughout. Since Joan Thirsk's *English Peasant Farming* tails away sadly at the point when Mr Beastall gets into his stride, this book will have a good, long shelf life in both public and private libraries if only as a supplement to the former. Yet whereas the Thirsk book opened new vistas to the historian chafing at the confinements of his formal garden and stirred up a mania of new planting, Mr Beastall's is unlikely to beget any such swarm of disciples or faddists.

B A HOLDERNESS

R MACHIN, *The Houses of Yetminster*. University of Bristol, Department of Extra-mural Studies. 1978. viii + 172 pp. 14 plates. £2.95.
This study of surviving farmhouses in north Dorset is

of much greater general interest than its rather unassuming title might imply. The author may have limited his enquiry to a small area, but he has asked questions, and used methods of study, which will be of interest to agrarian historians wherever they live. We are always calling for a more imaginative use of field work, in combination with documents, to help us elucidate the problems of rural history and here we have an exemplary model of how it should be done. The evidence of the houses themselves becomes a key factor in the analysis of the social and agricultural history of a pastoral region during the past 400 years.

Mr Machin started by noting that the village of Yetminster had an excellent collection of stone-built farmhouses in the local vernacular style and he set out, with the help of an extra-mural class, not only to study the buildings, but to ask some key questions. Notably, why were the houses built, for whom were they built, when were they built, and why at that time rather than another? He found that a higher percentage of pre-1714 houses had survived in Yetminster than in surrounding parishes. Using houses listed in the *Royal Commission on Historical Monuments*, Vol I *West Dorset* (1952) and expressing these as a percentage of the number of houses listed in late seventeenth-century hearth tax records, he showed that Yetminster had a 30 per cent survival rate, compared with an average of only 20 per cent in twenty-four surrounding parishes. This indicated that there was something special about Yetminster and led him on to a detailed investigation of its agricultural and tenorial history. Adroitly combining manorial documents, probate inventories, price data, and surviving dated houses he was able to show that Yetminster had been an overwhelmingly pastoral (and enclosed area) since about 1600 (and probably much earlier), and that its farmers had had the money to invest in rebuilding and improving their homes at times when two conjunctures of price movements coincided: namely when grain prices were low and when livestock prices were high. The most favourable periods were in the years around 1620, and fairly continuously between 1688 and 1730. Significantly these periods correlated very well with the small number of dated houses which had survived at Yetminster. Furthermore these dated houses possessed stylistic characteristics in common with many of the other surviving farmhouses, which enabled them to be assigned to a building period. Some of Mr Machin's arguments cannot perhaps be proved conclusively, but the case which he presents for a major rebuilding of farmhouses in favourable localities in pastoral areas between c1690 and c1730 is certainly persuasive.

There was, however, another characteristic of Yetminster which made it a highly favourable area for rebuilding. Its tenorial arrangements, and consequent social structure, gave its wealthier farmers an incentive as well as an opportunity to invest their savings. They

improved their houses not only for comfort but as an important element in competition for status. For Yetminster was divided into four manors (all of them belonging to non-resident owners), and its tenurial customs guaranteed that the copyhold tenants enjoyed rights of inheritance at low rents and fines. The farmers of Yetminster were virtual freeholders in fact, if not in name. In addition farms were not engrossed (many comprised 20 to 30 acres in the seventeenth century), and wealth was thus fairly evenly spread amongst a group of yeomen and minor gentry (mostly younger sons of more important families seated in the region). Thus without any clearly defined social leaders there was intense competition for status and prestige in the village, which was partly reflected in competitive house improvements.

The interpretation of the building activity at Yetminster is most interestingly done by the author, but it is not the longest part of the book. That is devoted to a functional and architectural analysis of the houses themselves, complete with plans and photographs. The houses enjoy considerable architectural distinction and they have been lucky to attract an historian who has been able to show how the study of vernacular architecture may be used to make a real contribution to social and agrarian history, with a much wider application than to the particular location concerned.

MICHAEL HAVINDEN

The Old Series Ordnance Survey Maps of England and Wales: A Reproduction of the 110 Sheets of the Survey in Early State in 10 Volumes. Volume II: Devon, Cornwall and West Somerset. Introduction by J B Harley and Yolande O'Donoghue. Harry Margary, Lympne Castle, Kent. 1977. xlv pp + 66 map plates. £15.

This is the second in a series of ten volumes in which it is intended to reproduce the 110 sheets of the Old Series Ordnance Survey of England and Wales. It covers the whole of Devon and Cornwall, plus rather less than half of Somerset.

The thirteen original maps were published in 1809 (Devon and Somerset) and 1813 (Cornwall). Here they are reprinted in sixty-six single-page sections, each section a little under 12 x 9 inches. Each double-page spread represents a quarter of an original sheet. The all-round margin on each page means that no detail is lost in the binding. There is a lengthy introduction, in which J B Harley of Exeter University and Yolande O'Donoghue of the British Museum discuss the background of the survey, the surveyors and the triangulation, and provide information on the drawing, engraving and publication of the maps. Each of the other volumes is to have a similar introduction.

Inevitably, this work will be compared with the David and Charles reprint of the same Old Series in ninety-seven separate sheets. The most important advantage of this series is that it reprints the earliest, unrevised sheets; mostly those of the first publication. The David and Charles maps are often based on later revisions: the difference is striking when comparing the two representations of the Devon coastline; in the Margary version the outline is much cruder and approximate. A disadvantage of this new reprint is that one must buy one entire volume at least; more if one's area of interest happens to fall across two or more volumes. More serious, the small size of the individual page-sheets makes study of anything larger than a very small area difficult. This difficulty is heightened by the lack of marginal references to adjacent sheets; there is no way of tracing a road, for instance, from north to south without constantly referring to the key-map in the Introduction.

Clearly, to anyone needing the earliest versions of the Old Series, these volumes will be invaluable. Librarians will appreciate the ease of handling and shelving books rather than maps, and anyone wishing to make a quick check on some small point is likely to turn first to the Margary edition. It seems likely, however, that the much larger sheets of the David and Charles edition will remain the mainstay of anyone working on wider aspects of the nineteenth-century landscape. To a great extent the two versions complement, rather than compete with, each other.

ROBERT S DILLEY

DONALD H AKENSON (ed), *Canadian Papers in Rural History, Vol. I*. Langdale Press, Ganonoque, Ontario. 1978. 113 pp. \$9.95

This book is the first in what is expected to be a continuing series, intended to counter the dominance of political history in Canadian historical studies. The volume includes only one paper by an historian, as the editor believes social scientists to be better trained in the use of mass data and to have developed more useful theoretical frameworks for the study of Canada's mostly rural past.

Four papers comprise Volume I, each average-to-long by journal-article standards. The first two are broad-ranging and deal with economic aspects of the Prairie Provinces. K H Norrie (Economics, University of Alberta) attacks the widely-held idea that Prairie farmers suffered from 'Central Canadian Imperialism' between 1870 and 1930. Using mostly secondary sources, he argues that there is no real evidence of discrimination in Ottawa-based decisions on freight-rates, on tariffs or on federal control of land. Then R E Ankli (Economics, Guelph) and R M Litt (Chase Manhattan Bank) examine the actual costs of establishing Prairie

farms, in an attempt to provide some quantitative background for studies of rates of rural settlement.

The other two papers focus more closely on relatively small areas of eastern Canada and make more use of local primary sources. K Kelly (Geography, Guelph) examines the development of marketing agencies in Simcoe County, Ontario, from 1850 to 1875. He finds through contemporary local newspapers that personal business initiatives and farmers' preferences obscured any tendency towards the development of a classical central place pattern, and also suggests that the area was less influenced than might be expected by external — American and British — demand. Finally, J I Little (History, Simon Fraser) looks at the different agricultural development of Anglophone and Francophone farmers in two southern Quebec townships in the third quarter of the nineteenth century. He shows that while both followed essentially the same practices, the French Canadians generally had smaller farms with poorer returns, and were handicapped by their reluctance to migrate in search of improved conditions.

This book and any successors deserve to succeed, as more work needs to be done on rural Canada, and the cross-disciplinary approach is healthy for others as well as historians. There might be more chance of success if future volumes take a more thematic approach, perhaps with editorial linkage of articles. If not, there is a risk that *Canadian Papers in Rural History* will come to be seen as yet another journal, in an age of many expensive journals.

ROBERT S DILLEY

VANESSA S DOE (ed), *The Diary of James Clegg of Chapel en le Frith 1708–55, Part I*. Derbyshire Record Society. 1978, lii + 304 pp. £8 (£6 to members).

This volume is the first of a series of three in which the Derbyshire Record Society proposes to publish a complete transcript of the diary of James Clegg, dissenting minister, medical practitioner and farmer, which he began in 1708 at the age of twenty-nine and continued till his death in 1755 at the age of seventy-six. Besides two plates, two maps, three pedigrees, and a substantial introduction to the entire work, Part I contains the diary to 1736; Part II will take the diary to 1747; and Part III will include the rest of the diary, together with Clegg's autobiography, written in 1730. Both the introduction and the text are copiously annotated; and as an additional bonus, while Part I is indexed, the indexes to Parts II and III will be cumulative.

Born the son of a clothier in Rochdale, and himself the father of several sons who went into business, Clegg was educated at various dissenting schools and academies before taking over the ministry of William

Bagshaw, the 'Apostle of the Peak', at Malcoff near Chapel-en-le-Frith following the latter's death in 1702. Much of the diary is devoted to details of his ministry, including his generally friendly relations with local Anglicans. His income from this source was so low, however, that from the start he supplemented it with the proceeds of a medical practice, substantiated by a *diploma medicum in absentia* from the University of Aberdeen; and with the profits of a forty-five acre farm, which he leased in 1713. Although stock-rearing was the mainstay of his farming activities, the diary indicates that the amount of arable farming practised locally was far from negligible, and that much of the more arduous work was performed on a semi-communal basis.

A popular and hard-working, if somewhat solemn, individual, Clegg's various pursuits took him regularly over wide areas of the Peak District and beyond. The Derbyshire Record Society, their editor, and the extra-mural students in Sheffield who laboured with her are to be congratulated on so successfully rescuing both him and his community from obscurity.

PETER ROEBUCK

DAVID I A STEEL, *A Lincolnshire Village: the parish of Corby Glen in its historical context*. Longman. 1979. xiv + 242 pp. £8.50.

Corby (the Glen being a modern addition) is a rural parish and village of some five hundred souls lying on the uplands of Kesteven, ten miles north of Stamford. In 1974 David Steel was appointed a research officer to make a study of the parish, a two-year project financed by the Willoughby Memorial Trust. The aim of the project, an ambitious one, was to place the 'current social position' of Corby in its historical context. Besides conducting historical research, Dr Steel carried out a census of the parish in 1975, in advance of a threatened housing development, thus giving his work a sociological as well as an historical dimension.

Sociology, however, is not Dr Steel's *métier*, and as a study of the present-day village the book is disappointing. What we are given instead is a readable and intelligent account of the factors, mainly economic, that have influenced the development of the parish, particularly over the last two hundred years. Coming to Lincolnshire from Scotland (like so many in the past), Dr Steel quickly familiarized himself with the folk and fields of Corby, as well as with an impressive range of archival material.

Despite its distance from the towns of Bourne, Grantham and Stamford, Corby lost its weekly market in the early nineteenth century. The region was not a predominantly arable one, and communications were poor. Commercially Corby felt the pull of Bourne, a

rapidly growing fen-side town, and then in mid-century, following the opening of the railway, the yet stronger attraction of Grantham. Corby's sheep fair survives to this day, but by 1850 the place was less of a town than a service village for the surrounding close parishes. Corby itself had once been a close village, but its character had changed as the neighbouring Irnham estate sold off its Corby property.

By 1900 Corby was suffering the usual problems of such villages during the period of agricultural depression. Families with long local connections were leaving the neighbourhood, and the tenements run up for the farm workers were creating a slum problem that was not to be vigorously tackled until after the Second World War. More specific to Corby was the altered role of the Irnham estate, for centuries past a focal point for Catholicism in the area, but from 1854 in Protestant ownership and only intermittently providing effective local leadership. In any case the Irnham estate has always been overshadowed by the noble domain of Grimsthorpe, on whose periphery Corby lies.

Within this framework, how far has Corby been able to develop a character of its own in recent years? Who can provide the social life and leadership in a parish where a substantial proportion of the land is now farmed from outside, where doctor and clergyman no longer command their pre-war social influence, where most of the schoolteachers (Corby has both a primary and a secondary school) do not live in the village, and where many of those who do live in the village work outside it? The impression Dr Steel gives is of an inward-looking community, whose past has not equipped it to deal energetically with its present problems.

These sombre reflections may be realistic enough, but they will not delight the *Akenfield aficionado* whom the publishers have clearly hoped to attract with this well-produced and generously illustrated volume. However, several of the chapters, especially those on farm holdings and land management, will provide meat for the serious rural historian. And Dr Steel does cheer up when he recounts the exploits of the village cricket team, or the pleasures of a day's beating through the dripping woods of the Grimsthorpe estate.

R J OLNEY

A T YARWOOD, *Samuel Marsden. The Great Survivor*. Melbourne University Press. 1977. xv + 341 pp, 27 illus, 4 maps. £13.98.

Samuel Marsden led a long and active life. Born in 1765, the son of a poor Yorkshire butcher, he became a protégé of the Elland Society, a group of north-country clerics who recruited and trained poor but able youths

for the evangelical wing of the Anglican Church. He was educated at the Society's expense at Hull Grammar School and Cambridge, then appointed by Wilberforce as assistant chaplain to the convict colony of New South Wales in 1793. Possessed of both energy and initiative, Marsden rapidly established himself in the infant colony. He had a church built at Parramatta, and established a Sunday school, day school, and an orphanage. With the land grants he acquired he became a substantial property owner and, mastering the necessary farming skills, a pioneer of fine wool production. As local agent of the London and Church Missionary Societies he personally undertook civilizing missions to New Zealand in several eventful voyages. He was a vigorous magistrate and a member of the small colonial elite, and became deeply involved in its highly personalized and often heated politics.

Marsden was a complex personality who tended to extremes of behaviour. He was a man of the cloth yet worshipped mammon and accumulated a sizeable personal fortune in land and sheep. Although capable of acts of great kindness to friends, as a magistrate he dealt harshly, even viciously, with convict transgressors. He accepted and forgave the peccadillos of subordinates but preached moral rectitude to the world at large, and would have nothing to do with public figures who did not measure up to what he believed were his own high standards of personal conduct. He was a perjurer and capable of manipulating the law to suit his own purposes. His missionary zeal was selective. While he worked untiringly on behalf of the Maoris, believing that the introduction of trade would 'inculcate moral and industrious habits', he considered that both convicts and aborigines were beyond redemption; he even sided with those who were killing aborigines to make room for the merino. Despite, or perhaps because of, his humble background he identified himself and the church he represented with the interests of wealth and privilege rather than those of the common man. He was extremely disputatious and an inveterate political meddler who believed firmly in the maxim that the end justifies the means.

Hitherto Marsden has been the victim of two conflicting historical interpretations. Australian nationalist historians have vilified him as the flogging parson and opponent of emancipist rights, while in New Zealand his missionary activities have caused him to be revered as the 'Apostle of the Maoris'. Yarwood has taken upon himself the task of rescuing the real Marsden from these one-dimensional caricatures. The resulting portrait is richly conceived. Marsden is firmly delineated within his social and political environment, which is brought vividly to life. He emerges as an impressive but nevertheless unpleasant survivor. Some of the complexities of his character remain unexplained. This is not so much the fault of the author as of a lack of suitable evidence from which to draw conclusions,

but it is a pity that Yarwood was unwilling to speculate further on the psychology of his hero. Instead he sticks firmly to the objective world and to what can be documented, and has done a mighty job in unearthing relevant material. This is a fine biography and will remain the definitive work on Marsden for the foreseeable future.

A E DINGLE

PAUL BEW, *Land and the National Question in Ireland, 1858-82*. Gill and Macmillan, Dublin. 1979. 307 pp. £12.

The land war at the end of the 1870s, and the Parnell era generally, has attracted more writing than any other period in modern Irish history, and continues to do so. A young historian from the Ulster Polytechnic, Paul Bew, adds to the literature with this volume which brings together the politics and land agitation essentially of the years 1879-82.

Dr Bew's book draws on the recent researches of Lee, Solow and Donnelly, and adds to them. But while he is sceptical about the concept of a revolution of rising expectations, frustrated in the economic depression at the end of the 1870s, as the root cause of the land war, basically the logic of his case involves acceptance, sometimes explicitly, of this approach. He is, even if his approach is a Marxist one, in the direct stream of revisionist writing on this period which is moving away from the simple and heroic view.

He sees that even in 1879 in Mayo the agrarian unrest preceded the bad harvest by several months, and in fact he makes a point of giving a wider background to the New Departure, the celebrated convergence of constitutionalist and Fenian opinion in 1879, by linking the Fenians and the agrarian issues in what he sees as the culmination of 'a deepening social radicalism of the Fenian-led agitation in Connaught'. This is an invaluable aid to an understanding of the period. He explains how in 1879 the unrest was confined to the west, reaching the prosperous regions of the east and south only in the second half of 1880, a fact that on reflection is very evident but that is lost in the traditional view of a great national movement of countrymen with no conflict in self-interest to divide them. He emphasizes the class divergences in rural Ireland, the large and middle farmers looking for rent reductions, the smallholders of the west for a land redistribution. On the conduct of the agitation itself, he sees boycotting as a colourful but minor dimension, the most effective feature of popular resistance being brought to the movement by, or borrowed from, the larger tenants: the simple expedient of using the full resources of the law in refusing or delaying the payment of rent.

The book's strengths are considerable, the limitations an awkward structure and style, and also a tendency to adhere too closely to the sources in the

presentation of his case, with the consequence that the impact of the underlying freshness of the book is considerably blunted. There are two broad weaknesses in Dr Bew's account. First, too short a period is studied, because despite the broader background suggested by the title the book deals essentially with the events of the years 1879-82. While there is some account of the build-up to the land war, the currents behind it were more pervasive than suggested here. For instance, the involvement of comfortable farmers in the Land League, though belated, was not purely opportunist as is implied by Dr Bew's account, as the nationalist politics of the 1880s swept the entire south and not simply the impoverished west. The Farmers' Clubs and tenant defence associations, already in existence, imply a progressive build-up, just as in Dr Bew's account the agitation in the west has well-defined antecedents: his view is too narrowly from the radical but limited perspective of Mayo. Secondly, he tends to use the language of his sources. Large farmers were castigated as ranchers by poor and radical smallholders and their sympathizers, but they embrace a wider and more complex gamut of activities than is suggested in Dr Bew's account.

The book prompts three general observations — and it is one of the merits of the book that it leads the reader on to wider reflection. First, the Land League must be seen as part of a wide cultural and political awakening, complex in origin and motivation. Second, living standards and material expectations are crucial issues and need to be studied in their own right so that their role can then be evaluated in the wider framework. Thirdly, this involves the necessity of a clearer understanding of the impact of the depression, which hit Ireland disproportionately hard in fact in the late 1870s and early 1880s. In all the revisionist books of the last six years the depression has remained curiously imprecise. Yet the revisionist approach of books like Dr Bew's, which brings up divergences in class, regional contrasts and social complexities, makes it necessary to understand the background with a degree of fine distinction which would not be necessary in more traditional interpretations.

Marred only by its ungainly style and structure, Dr Bew's book remains an intelligent and important contribution to a subject which will continue to dominate much of Irish historical writing.

L M CULLEN

INGOMAR BOG, GÜNTHER FRANZ *et al*, *Wirtschaftliche und soziale Strukturen im säkularen Wandel. Festschrift für Wilhelm Abel zum 70. Geburtstag*. Hanover, Verlag M & H Schaper. 1974. 3 vols, 826 pp.

It is impossible in a short review to write fairly and comprehensively about three volumes containing forty-four essays all by different authors, and spanning the

period from the Alemannic colonization of south-west Germany to the end of the nineteenth century. But the wide scope of these essays accurately mirrors the wide interests of Dr Wilhelm Abel, in whose honour these volumes are published, and should give him great satisfaction. For here is abundant proof of the way Abel's writings on German and central European history have stimulated countless scholars to follow in his footsteps and investigate more deeply problems originally raised by him. He mapped an enormous territory, geographically and chronologically; almost no one nowadays dares to undertake single-handed similarly sweeping surveys. But detailed studies are the necessary second stage in all history writing, and there is much illuminating detail in the work presented here that will surely lead to new generalizations.

Volume I is devoted to agrarian problems before 1800; volume II to industry, commerce, finance, and marketing; and volume III to economic problems after 1800. It is invidious to single out a few essays, but the reviewer is bound to make a personal selection. Of particular interest is Wolfgang Zorn's survey of the development of agrarian history in different European countries in the last fifty years, including some account of the effects of Nazi ideology on German writing. Karl Hasel traces carefully the historical reasons behind the fact that nowadays (1961) 60 per cent of the forest in the German Federal Republic is in public or institutional hands and only 40 per cent in private hands, a situation very different from that in Austria and northern Europe. Heinz Haushofer while writing about a forester in Bavaria whose policy document he has uncovered whets the reader's appetite for more information on forest management in Germany c 1790. Karl Helleiner sheds light on the special enclosures for growing cabbages and the boiling houses for *Sauerkraut* in Austrian villages in the fifteenth to seventeenth centuries. Clearly a remarkable book could be written on the cabbage and its history in Europe at this period; it would have to trace its history from Italy through Austria and France, Germany, and Holland, thence to England. And surely the frontispiece should be the remarkable picture at the Bowes Museum by Daniel Schellinks (1625-1701) entitled *Landscape with Windmills*. Windmills are certainly not the first feature to catch the eye, but rather the women in the foreground, driving donkeys laden with panniers of enormous cabbages, followed by a man on foot with another great basket, full to the brim with cabbages. John Hurst offers the tribute of English historians in a well-illustrated essay describing the archaeological work that has been done on English medieval villages, and the conclusions now emerging. It is sobering to discover how often medieval houses were rebuilt, and on new alignments. His best example from Wharham Percy describes the site of the manor house, which was then used to accommodate two peasant houses, then

one larger peasant house. This was then rebuilt (and turned ninety degrees) in the fifteenth century, and rebuilt three times more.

In volume II Professor Freudenberger examines evidence for the length of the working day, but finds no simple answer to his simple question. Professor Maczak offers evidence on the cost of living in different parts of Europe drawn from the comments of travellers. The sixteenth- and seventeenth-century traffic in cattle from Poland and Hungary, which Professor Abel traced to Nuremberg, is traced further westwards to Strasburg by Jean Vogt. Pierre Jeannin reckons costs and profits of the Baltic grain trade, 1550-1650, using and comparing prices at Danzig and Amsterdam.

Volume III contains a survey of the productivity of Swiss agriculture in the nineteenth century, an essay on handicraft industries in Germany, 1850-1900, and, finally, a full bibliography of Professor Abel's own work, which began in 1929 with his dissertation for Kiel University on German corn merchants.

If these volumes suggest any general observation on the directions taken by agrarian history in the last twenty-five years, it is that far more progress has been made with economic development than with social structure. Some of the essays in these volumes on social organization are noticeably preliminary and tentative rather than final conclusions. And no one has yet taken up the challenge thrown down by Professor Abel in his *Agrarpolitik* and ventured to redraw his map of European customs of inheritance. Does it mean that historians have found it easier to communicate with economists than with sociologists?

JOAN THIRSK

ERIC PAWSON, *The Early Industrial Revolution. Britain in the Eighteenth Century*. Batsford. 1979. 233 pp. Tables, figs, maps, illus. Hardback £9.50; paperback £5.95.

Dr Pawson will already be known to readers of this journal as the author of a very readable and well-balanced account of the English turnpike roads. He has now ventured into the wider field of the general economic history of Britain in the eighteenth century in a short book designed specifically for students of historical geography. The subject-matter, in the author's own words, is 'the acceleration of economic and geographical change in eighteenth-century Britain'. The geographical trimmings to the conventional economic history amount to rather fuller accounts than is usual of internal migrations, of internal trade routes, and of urban-rural economic relations. In this way, historical geography is differentiated from economic history only in respect of the balance of subject-matter, and, in the event, Dr Pawson's historical geography turns out largely to be economic history with a few more maps and rather less

economics. The maps are generally a valuable addition, except in the fairly numerous cases where they exclude Scotland: in a geographer's book allegedly about Britain this is unforgivable. But the absence of economic analysis is more crucial. The approach is heavily descriptive, and there is a disappointing lack of curiosity as to why the economy took the course it did. The subject of the book, after all, is one of the most significant instances of spontaneous acceleration of economic growth known to history. Surely the author underrates the interest of students, even students of historical geography, in the dynamics of growth.

Within its self-imposed limitations, nevertheless, this book is clearly written, mostly up to date, and enlivened by excellent tables, diagrams, maps, and illustrations. The mandatory chapters on industry, transport and trade are generally well done, showing wide reading intelligently digested, but the chapter on demographic change is rather light-weight, taking no account of any of the reconstitution studies of fertility and mortality, and concentrating on the less problematic migrations. Readers of this journal will naturally turn first to the chapter on agriculture. They will find it extremely traditional, with the same merits and limitations as the rest of the book — that it offers an accurate and balanced account based on wide and up-to-date reading, but rarely breaks through the descriptive crust to get to grips with the mechanics of change. While the work of E L Jones, for example, is highly commended in the bibliographical notes, the price movements which form the core of much of his analytical approach are scarcely noticed by Dr Pawson. The standard of accuracy is generally high, though this reviewer, in particular, was grieved to find Ambrose Crowley consistently referred to as Abraham Crowley. In all, then, this is a useful introductory text in which information is presented in a clear and orderly manner. If it fails to excite economic historians it will be because historical geography seems, to judge by this example, not to have enough to offer that is distinctive or intellectually stimulating to compensate for the lack of economic muscle.

M W FLINN

G E MINGAY, *Rural Life in Victorian England*. Futura. 1979. 238 pp. £1.50.

This modestly-priced paperback edition, which was first published in hardback by Heinemann in 1977, will be welcomed by both students and inquiring general readers of English rural history. After outlining the social and economic conditions prevailing in the countryside and the momentous changes that were influencing rural life in the century after 1815 — the early growth in population and subsequent out-migration, the development of industrial communities in rural areas, enclosures, the coming of the railway,

high farming, and the extension of the franchise — Professor Mingay devotes the rest of his study to an examination of the lives of the countryman. Landowners, farmers, farmworkers, land agents, professional people, and also the less-well-known industrial workers in the countryside and the tradesmen and craftsmen, are all treated in turn. The book closes with a discussion of the decay and passing of the old village life.

By employing a rich blend of contemporary comment, some fifteen illustrations, scholarly detail, and apt anecdote the author admirably succeeds in portraying the rural dwellers' existence. It is possible to depict the quality of nineteenth-century English rural life either in cosy or in harsh terms. Professor Mingay's willingness to consider all sides of contentious issues, as, for example, the impact of enclosure, the role of the landowners and the clergy, the quality of elementary education, and the extent of the poverty of rural labourers, achieves a balanced overview of rural society. The final chapter on 'The End of the Old Order' also strives for balance in assessing the effects of the changes that occurred within the countryside over the course of the century. Here the losses and gains of the country labourer with the passing of his traditional position of dependence and tutelage are carefully weighed. In sum, we are presented with a lively, thoughtful account of a complex, changing society.

DAVID W HOWELL

DONALD L WINTERS, *Farmers without Farms: Agricultural Tenancy in Nineteenth Century Iowa*. Westport Publ. 1978. xvi + 145 pp. 2 maps. £10.75.

With its famous tradition of homesteading, America has always been thought of as the home of the family farmer. However, the appearance in the northern prairies and plains during the later nineteenth century of widespread farm tenancy has been discussed by Gates and others since the 1930s, and its incidence in Iowa and Illinois, in particular, was examined by Bogue in his *From Prairie to Cornbelt* in 1963. Gates and other historians have seen tenancy as arising in large part from defects in the federal land system: the ability of speculators, land companies, and railroads to gain control of large areas, so that the farmers who bought land at the consequently inflated prices were ripe for plucking by loan sharks and frontier bankers; many of these were obliged to default on their debts and sank into the tenant class.

Professor Winters' thesis is that numbers of farmers (like their English counterparts) actually preferred to rent land rather than buy it. They could then work a larger acreage with a higher investment in stock, and so achieve greater efficiency. Rising prices of land, a widening differential between net farm income and

mortgage interest rates, and the rising cost of livestock and equipment influenced this preference. The greater part of his book is taken up by a number of statistical investigations designed to test the argument, based on data from a sample of Iowa counties.

The book makes a valuable discussion by advancing an alternative and rational approach to the tenancy

problem, though looking at it from a wider perspective it is perhaps a pity that the argument was not reinforced by reference to the strong preference for tenancy exhibited by English commercial farmers in the same period.

G E MINGAY

Shorter Notices

M W BERESFORD and J K S ST JOSEPH, *Medieval England: an aerial survey*. Second edition. CUP. 1979. xviii + 286 pp. £10.

This handsome and moderately priced volume is the second edition of a work first published in 1958. It represents a considerable advance over the earlier edition: there are more numerous and more appropriate photographs, with corresponding changes in the text; photography of a far wider range of sites has been undertaken; and some new topics have been included. The purpose of the book remains the same: to treat specific examples within a general account of changes and survivals in the medieval landscape. There are many topics of interest to agricultural historians, particularly those dealing with field systems (including Laxton, Isle of Portland and Braunton), mills, ponds and warrens, village sites, depopulated villages, and village plans — to mention but the most evident. But the whole volume is a quarry for local and national historians, and all those concerned with the surviving evidence of medieval life.

G E MINGAY

LYN ARMSTRONG, *Woodcolliers and Charcoal Burning*. Coach Publishing House, Horsham. 1978. 95 pp. Illus. £2.50 (inc p & p).

This is an attractively produced book, copiously illustrated with both early photographs and line drawings. The book describes the life-style of the charcoal burner, methods of hut building in the forests and the techniques of charcoal burning. The text is, however, rather disjointed. Most of the short chapter on the charcoal burning life is concerned with the thirteenth to seventeenth centuries, being based largely on wills and probate inventories, whereas the descriptions of hut building and kiln firing are based almost entirely on oral evidence augmented by a long quote from John Evelyn. The oral evidence is clearly presented

and critically discussed, and this, together with the excellent collection of photographs of huts and kilns, makes a useful contribution to the recording of a dead craft.

JENNIFER TANN

MARTIN BRUNNARIUS, *The Windmills of Sussex*. Phillimore, London and Chichester. 1979. 211 pp. Illus. £8.95.

The study of wind and watermills is the pursuit of a dedicated few who have recorded by measured drawings and photographs the fast disappearing remains of past milling activity. The wind and watermill section of the Society for the Protection of Ancient Buildings has done much over the years to foster research and preservation. A number of books on mills in particular regions or counties had appeared in recent years, and whilst many of the authors perform a useful archaeological service in one sense, they fail to interpret their findings or to relate them to other studies. The result is a growing body of non-comparative case studies. *The Windmills of Sussex* falls into this category but its strength lies in the well-researched field work. The author is an engineer who has produced clear drawings and descriptions of the workings of windmills, together with an indication of the estimated power generated by some Sussex windmills. This is most interesting, for it becomes clear that in many locations windmills were capable of generating considerably more power (when the wind obliged) than many country watermills in an industry that had relatively high power requirements (compared with textiles for instance). There are sections on millwrights, a gazetteer and many excellent photographs. The historical notes on each mill are rather superficial and the author's chatty style can be off-putting, but there is much of interest in this attractively produced book.

JENNIFER TANN

WILLARD W COCHRANE, *The Development of American Agriculture: a Historical Analysis*. Univ Minnesota Press, Minneapolis. 1979. xii + 464 pp. Maps, figs. Cloth \$25; paper \$10.95.

This substantial text is intended primarily for students of agriculture in American colleges, and this no doubt helps explain its emphasis on twentieth-century developments. It provides a clear and concise summary of the main facts of expansion from colonial times, and concludes with a discussion of progress and policy since 1950, using some elementary demand and supply analysis to construct a theoretical model for the

exposition of this period. There are numerous useful maps and tables, though the long periods covered by the statistics means that the figures, not adjusted for changes in the dollar's purchasing power, are not quite what they seem. This is a sound text for persons coming fresh to the subject who wish to gain a general over-view of American agricultural growth: it in no way supersedes the major works of scholars such as Gates, Shannon, Fite, and Webb.

G E MINGAY

Books Received

- DONALD H AKENSON (ed), *Canadian Papers in Rural History, Volume II*. Langdale Press, 1980. 172 pp. Maps. Tables. Illus. \$12.95.
- FRANCOIS BÉDARIDA, *A Social History of England 1851-1975*. Methuen, 1979. xvii + 347 pp. Maps. Figs. Tables. Illus. £5.50.
- CHARLES W BERGQUIST, *Coffee and Conflict in Colombia, 1886-1910*. Duke University Press, 1978. x + 277 pp. Maps. Tables. \$16.75.
- JONATHAN C BROWN, *A Socioeconomic History of Argentina 1776-1860*. Cambridge University Press, 1979. xiv + 302 pp. Maps. Tables. Illus. NP stated.
- JOHN DAVIS (ed), *Gramsci and Italy's Passive Revolution*. Croom Helm, 1979. 278 pp. Maps. £12.50.
- RONALD A FRANCISCO, BETTY A LAIRD, ROY D LAIRD (eds), *The Political Economy of Collectivized Agriculture: A Comparative Study of Communist and Non-Communist Systems*. Pergamon Press, 1979. xii + 250 pp. Tables. Figs. £9.75.
- BILQUIS AZMAT GAUCHAR, *The precipitation of Pakistan, Synoptic situations and salient features*. Asian Publishing Company, 1980. 153 pp. Figs. Appendices. £9.95.
- H GEORGE, *Soils in Northumberland I, Soil Survey Record No. 53*. Rothamsted Experimental Station, 1978. 82 pp. Figs. Tables. Plates. £3 with maps. £1 without maps.
- DAVID KENNETT, *Victorian & Edwardian Horses*. Batsford, 1980. vii + 120 pp. 120 illus. £5.95.
- JOSEPH G KNAPP, Edwin G. Nourse — *Economist for the People*. Interstate Printers and Publishers, Illinois, 1979. 544 pp. Illus. NP stated.
- EMMANUEL LE ROY LADURIE, *Montaillou, Cathars and Catholics in a French village 1294-1324*. Penguin Books, 1980. xvii + 381 pp. Maps. £2.50 paperback.
- ALAN S MILWARD and S B SAUL, *The Economic Development of Continental Europe 1780-1870*. George Allen & Unwin, 2nd edn 1979. 548 pp. maps. Tables. £6.95.
- ANTONIUS FEKETE NAGY, *Monumenta Rusticorum in Hungaria Rebellum Anno MDXIV*. Akadémiai Kiadó, Budapest, 1979. xxxviii + 728 pp. Illus. \$48.
- E SERENI, Istituto 'Alcide Cervi' Annali 1/1979. Società editrice il Mulino, Bologna, 1979. 438 pp. NP stated.
- C G SMITH, *The Gale of 2nd January 1976, Its character and effects in the Oxford area as compared with some other notable gales since 1880*. Research Papers, School of Geography, Univ of Oxford, 1979. 32 pp. Figs. NP stated.
- AXEL STEENBERG, *Draved, An Experiment in Stone Age Agriculture, Burning, Sowing and Harvesting*. National Museum of Denmark, 1979. 61 pp + LII plates, V maps. Tables. NP stated.

<i>Wirtschaftliche und soziale Strukturen im saekularen Wandel.</i> <i>Festschrift für Wilhelm Abel zum 70. Geburtstag</i> , by Ingomar Bog, Günther Franz <i>et al</i>	JOAN THIRSK	140
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Correspondence on matters relating to membership, subscriptions, details of change of address, sale of publications, and exchange publications should be addressed to E J T Collins, Treasurer, BAHS, Museum of English Rural Life, The University, Whiteknights, Reading, Berkshire.

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